

# AMERICAN ARTISAN

SEPTEMBER 1957

..The Magazine of

RESIDENTIAL AIR CONDITIONING  
WARM AIR HEATING • SHEET METAL CONTRACTING

*COMFORT STORY IS BEING TOLD to millions of consumers  
via newspaper promotion of heating standards . . 42*

SCRAP SALVAGE plan turns  
waste into profit . . . . .70

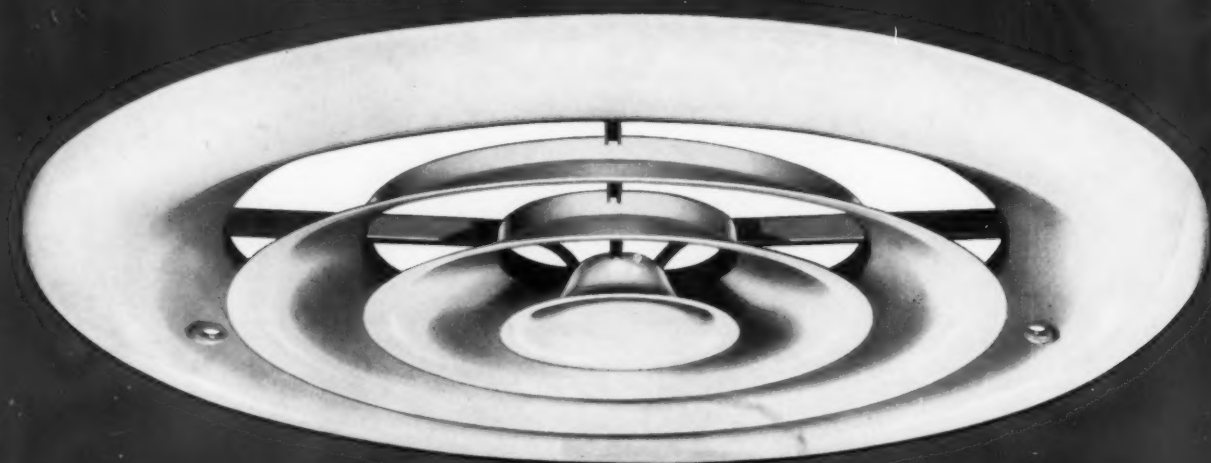
SURVEY SPOTS shortcomings in  
a slab loop system . . . . .54

PEAK LOAD demands generate  
cooling troubles . . . . .66

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# NEW **BIG** CAPACITY



## TWO NEW CEILING DIFFUSER LINES

Think of a window half-way open. That's an ordinary diffuser. Now open it *all* the way. That's the big CAPACITY difference you get with these BIG new ceiling diffusers by Air Control. Startling engineering advances provide 50% more free area for unprecedented performance on ducts of same listed size — eliminate all need for buying oversize diffusers.

**ROUND MODELS**, with 50% greater free area than ordinary diffusers, feature advanced-design Air Flow rings with broad, anti-smudge outer ring and self-sealing gaskets. Available in both flush and step-down types.

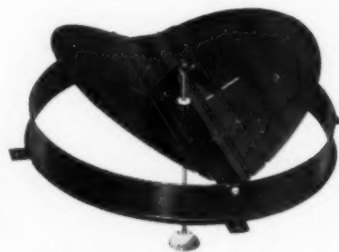
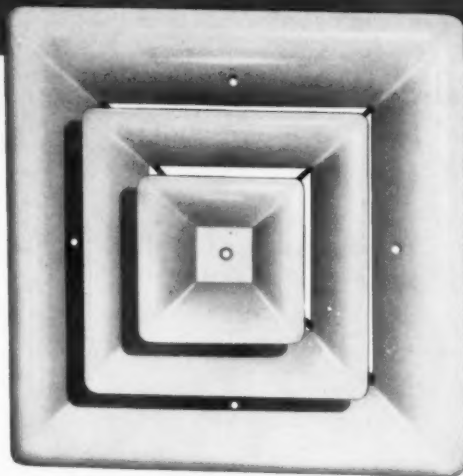
**No. 90 SQUARE DIFFUSERS**, with 40% greater free area, offer the same styling and engineering advances and are particularly popular for ceilings of acoustical material. Available in step-down style.

**New "STA-SET" dampers** are revolutionary new concept in damper design with push-pull rod for positive opening and closing of butterfly valves — eliminate troublesome chains. Special nylon brake holds valves in any position — cannot rust and lock damper. Adjusto-Stop permits balancing system at diffuser face.

See your jobber—now—or write for full details.

**AIR CONTROL PRODUCTS, INC.**

157 Center St. Coopersville, Michigan



Available for both round and square diffusers.



HOW SUNDSTRAND FUEL UNITS BACK UP YOUR BURNERS

# Keeps nozzle cleaner 3 ways



Large fine-mesh monel metal filter



Hydraulically balanced valve



Bronze-on-neoprene valve cutoff

Nothing else keeps foreign matter out of your oil burner nozzle like the fine-mesh monel metal screen of a Sundstrand Fuel Unit—spring-seated to exclude *all* dirt and designed extra-big to assure uniform oil delivery all season, cut service to a minimum with all of Sundstrand's single- and two-stage models. That's half the job of keeping the nozzle really clean—the other half is eliminating external carbon formation. This is efficiently handled by Sundstrand's hydraulically balanced valve and seep-proof bronze-on-neoprene valve cutoff. These are designed to keep oil from collecting on the nozzle during and after shutoff, eliminating carbonizing from reflected heat. No other fuel unit offers you this protective combination—another good reason to specify Sundstrand, *first in fuel units!*



## SUNDSTRAND HYDRAULIC DIVISION

of Sundstrand Machine Tool Co., 2210 Harrison Ave., Rockford, Ill.—Eastern Sales Office: 89 Summit Ave., Summit, N. J. Made in Canada by John Inglis, Ltd., 14 Strachan Ave., Toronto; in Sweden by Sundstrand Hydraulic AB Stockholm; in France by R. S. Stokvis, et Fils, S. A., 20-22 Rue Des Petits-Hôtels.

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Founded 1864; Vol. 94 No. 9

## RESIDENTIAL AIR CONDITIONING WARM AIR HEATING SHEET METAL CONTRACTING

Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

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Published monthly by Keeney Publishing Company, 6 N. Michigan Ave., Chicago 2, Ill., U.S.A. Copyright 1957 by Keeney Publishing Company.

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Member of Audit Bureau of Circulations,  
Magazine Publishers Association, Inc., and  
Associated Business Publications

Yearly Subscription Price—U.S. and possessions, \$3.00; Canada, Cuba, Mexico, South America, Central America, \$4.00; Others \$6.00. Single copies, U.S. and possessions, 35c. Back numbers, 60c. January, 1957, Directory Issue, \$1.50 per copy. *Change in Address:* Report new and old address to publisher and local post office; deadline date 18th of preceding month. Entered as second-class matter, July 29, 1932, at the post office at Chicago, Illinois, under the Act of March 3, 1879. Additional entry at Mendota, Ill.

# Complete Mueller Climatrol heating line keeps you in profit position



**Mueller Climatrol Traditional units  
first with quality features that sell**



Here's a complete line that you can grow on! Mueller Climatrol offers a unit for every budget and every comfort requirement, either commercial or residential.

You can sell hard on features too — up-draft design . . . free floating radiators . . . large, quiet blowers . . . rust-proofed steel casings . . . plus a specially designed burner for each unit.

Cooling can be added to any Mueller Climatrol heating unit easily and at reasonable cost.

Most important, Mueller Climatrol units are backed by 100 years' experience and reputation for quality . . . enjoy top customer acceptance.

**Suburbanaire® line favored where cost  
must be considered along with quality**



The new home market is wide open to the dealer with the Suburbanaire line. Mueller Climatrol has combined quality with economy in a complete line that's designed to give you a selling edge in home construction.

In the Suburbanaire line are highboys, counterflows, horizontal and gravity units — each in practical size ranges . . . each reflecting Mueller Climatrol's progress-pacing design throughout.

Start now to sell quality, brand-name heating equipment at low cost — with Suburbanaire.

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**MUELLER CLIMATROL SALES CLIP . . .**  
... CLIMATE CONTROL FOR HEALTHFUL LIVING



## the editor's notebook

### Thumbing Through This Month's Artisan

... we find some capsule comments from letters from all over the country as each phase of the *Industry Applauds Heating Standards*. We hear dealers, wholesalers, manufacturers, associations and publications voice their approval of the *Standards for Rating Heating Systems* card and the 16-page special section discussing the sales promotion power of these standards, in the July Artisan. We note that plans are being formulated by all segments of the heating industry for extensive promotion of the non-technical standards which emphasize "quality—not price" in language the home owner can understand. In two related articles, we see how *Newspaper Advertising Puts Standards Story Across*, and how a *Wholesaler Meeting Kicks Off Statewide Standards Campaign* in Indiana.

### Loads

... and we are reminded that *Hot Weather Loads Put Cooling System to Test*, in time to solve some of the peak temperature load problems which cause equipment malfunctions. Author S. W. Reid describes some of the more common trouble spots and tells, through charts and explanations, what to do about them. Described are such points as pull-down loads, functional disorders, water flow, condenser scale, and other timely factors.

### Scrap

... we meet a sheet metal contractor whose *Scrap Salvage Plan Turns Waste into Profit* in a shop where a study of waste prob-



### ODF\* TANK GAUGE gives exact reading level of oil in tank *at point of delivery!*

Located outside of building at fill pipe, this new, easy-to-read fraction calibrated, pressure-tight gauge shows the exact level of oil in tank at all times! Saves costly, time consuming trips to basement and unnecessary unreeling of hose... Permits delivery without disturbing customer and eliminates spills as there is a "stop filling" indicator on calibration. Made of weather-proof materials throughout with thermometer indicator securely encased in plastic dome that will not fog or cloud up. No gears, cams, magnets, tapes or intricate mechanisms to get out of order. Write for complete information and low cost unit prices on this modern "delivery point" remote reading gauge today.

**"OIL DEALERS' FRIEND"**

TELLS WHEN OIL IS NEEDED

... HOW MUCH IS NEEDED

... WHEN TO STOP FILLING

TYPE ODF-1½ Fits 1½" tank opening  
TYPE ODF-2 Fits 2" tank opening.

- Weather-tight plastic dome calibration assembly.
- Easy-to-read indicator.
- Shows exact reading level at all times.
- Made of quality oil, weather and corrosive resistant materials.
- Durable, heavy-duty construction.
- No complicated mechanism.
- Simple and quick to install.
- Lowest cost remote reading gauge on market.

On guard—24 hours a day

**KRUEGER Sentry GAUGES**  
GREEN BAY • WISCONSIN

## the editor's notebook

(continued)

lems resulted in a four-point salvage program: 1) training mechanics in what to save, 2) placing salvage pieces in proper file racks, 3) exercising good housekeeping practices, and 4) referring to the racks for small pieces as they are needed. We take advantage of the contractor's experiences in building the racks and bins, segregating materials by size and gage and taking inventories.

### Armory

... and we are told *Who to Contact for Armory Plans* in the second of a series of four articles describing the big armory building program underway by the U.S. Army Corps of Engineers, to help warm air heating dealers get in on a profitable new market. This article tells how and where dealers can obtain specifications for the 135 new school-like armory buildings, as the first step in bidding, estimating and installing warm air heating systems. We note also, that the way is paved for warm air by favorable government experience with this type of heating.

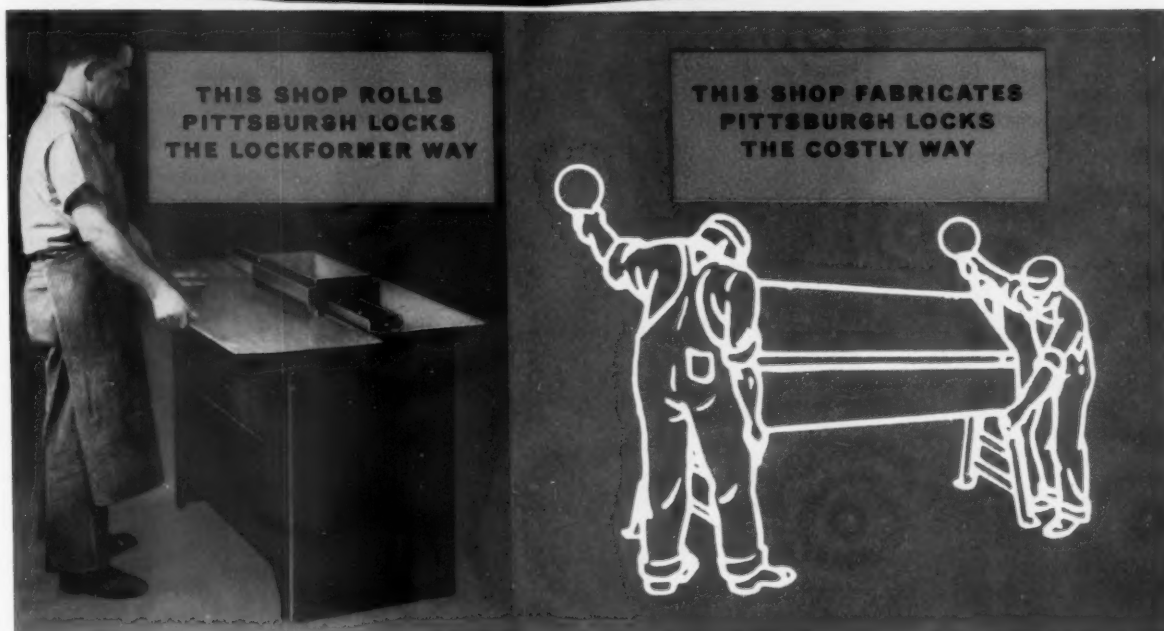
### Cites Change in Status Of Sheet Metal Foremen

THE JOB superintendent and the shop foreman have been recognized as holding key positions in the sheet metal industry. Louis Ruthenburg, chairman of the board, Servel, Inc., in an address to members of the National Management Association, said:

"A change in the status of the nation's foremen from departmental master mechanics to positions of fully responsible managers and administrators has taken place during the most rapid evolution in history — a 40 year



**Same job...  
but one shop will make  
more profit than the other**



It's easy to see why the shop with a Lockformer makes more profit on every job. In the shop still using hand methods, it takes two men 4 to 5 minutes per lock, or a total of 8 to 10 man-minutes. One man and a Super-Speed Lockformer will roll an 8-foot Pittsburgh in less than 7 seconds. It's simple arithmetic to figure the dollars saved in the actual seam making.

But that's not all. The Lockformer-made Pittsburghs assemble so much easier and faster without further prying open by hand that over-all fabrication costs are cut in half.



One man with a Lockformer makes more Pittsburgh Locks than 16 men with 8 brakes

***LOCKFORMER***

***time saving,  
money making equipment***

The Lockformer user also adds more money to the profit side of his ledger because, with extra rolls and attachments, the Lockformer can save time and dollars on a wide range of lock-forming jobs...making double seams, standing seams, drive cleats, and right angle flanges.

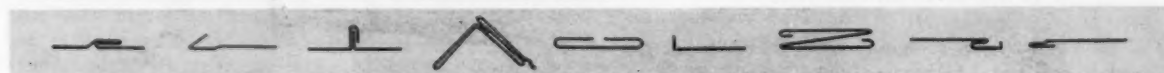
There are over 30,000 Lockformers proving these cost-saving claims every day. If you still are not using one of them, invest a few hundred dollars today...you'll have it back on the first couple of jobs.

Or if you have too much work for the Lockformers you now have, another Lockformer can mean twice the savings.



Write for **FREE**  
Lockformer  
Catalog

Manufactured by  
**The Lockformer Co.**  
4615 W. ROOSEVELT ROAD  
CHICAGO 50, ILLINOIS





## the editor's notebook

(continued)

period in which physical, economic, political and social changes have profoundly affected this area of industry."

### Portable Tools Properly Grounded?

IS YOUR portable electric equipment properly grounded? If not, burns and death-causing shock may result, according to the National Safety Council. Indirect injuries, too, may arise from use of ungrounded portable electric equipment if it's defective. For example, a workman received a slight shock from a defective tool and dropped it on his foot. He suffered a painful injury. Slight shocks also have caused fatal falls from heights.

Common portable electric equipment — which often is used in industry — includes drills, abrasive tools, saws, nibblers, etc.

Even equipment that appears to be in safe operating condition may have shorted, broken or exposed wires, the council said. They may make contact with the metal framework of the equipment, causing it to become energized.

To reduce the danger of electrical shock, it's important that a separate ground wire be provided from the tool to a low-resistance ground connection. Most tools supplied to our field contain this safety device. However, in many cases, workmen have been careless in using the ground lead.

In the shop, where electricity outlets are handy, the three pronged plug or ground prong at the side of the receptacle can assure the use of this safety feature.

In the field, extension cords tend to discourage the use of the ground wire. Workmen should be encouraged to seek out and to use



## "DUCTAPE Installation Saves 80% of Labor Cost!"

That's what Glenn Cooper, General Manager of Place and Company, South Bend, Indiana says. Here is his statement:

"For years we used various materials for our heating and air conditioning ductwork. The old methods were time consuming. We had to wait 6 to 8 hours for the grouting to set. The joints weren't moisture-proof and they often disturbed air flow through the ducts.

"When we began to use Arno Ductape we could seal sections of cement and asbestos pipe with one quick wrapping of Ductape—with an amazing 80% labor savings! The seal is permanent, smooth and moisture-proof!"

Find out for yourself. The coupon brings you a free sample.



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Fort Worth—2724 Tillar Street

Los Angeles—3225 East 46th Street  
Minneapolis—401 Plymouth Ave.  
New York—104 West 17th Street

### ARNO ADHESIVE TAPES, INC.

Subsidiary of The Scholl Mfg. Co., Inc.

4110 Ohio Street, Michigan City, Indiana

Please send me a free 15-ft. sample flame-resistant ☐ non flame-resistant ☐  
I am a Distributor ☐ Contractor ☐

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Company \_\_\_\_\_

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City \_\_\_\_\_

State \_\_\_\_\_

## the editor's notebook

(continued)

good grounding practices in the field. Water pipes, metal frameworks of buildings, or other metal structures in direct contact with the earth may be used to ground equipment.

### Sees Continued Growth Of Small Business

ALMOST every day we read in the newspaper about mergers of businesses, so much so that many people ask "What's to become of small business?" It does seem that the big companies are getting bigger and that the small business man is disappearing from the American business scene. But there are some people who fail to listen to rumors and to be impressed by what may seem to be trends. One of these is Dr. Ralph J. Watkins, director of research, Dun and Bradstreet, who has made a detailed projection in this direction for a glance at the picture 20 years from now. Mr. Watkins expects 5.75 million business concerns to be in operation 20 years from now. He says:

"On the average, our economy needs one business concern for approximately every 40 people. In 1929 we had one business concern for every 40.2 people; in 1939, one for every 40.6; in 1949, one for every 37.3; and in 1955, one for every 39.1." Based on population censuses, he expects 4.50 million concerns in operation by 1960; 4.90 million by 1965; 5.25 million by 1970; and 5.75 million by 1975. Anticipated business growth is intimately linked to a population's upsurge. On an average day in 1957, more than 11,500 American babies will be born; more than 4300 marriages will take place; and approximately 4300 Ameri-

# "STAINLESS STEEL MEETS ITS MASTER IN POWERFUL WISS SNIPS!"

says J. A. Fritch, sheet metal specialist  
J. A. Fritch & Sons, Peoria, Ill.

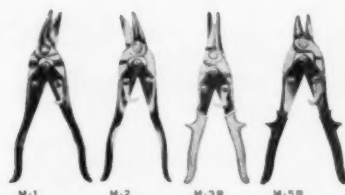


Specializing in sheet metal and warm air heating, J. A. Fritch & Sons have earned the reputation for superior work.

In so doing, they've relied on the snips with an unequaled reputation for precision work.

"We recommend Wiss Metal Master 'Aviation' Snips," says Mr. Fritch, "because they've answered all our problems in cutting stainless steel, copper, and galvanized iron. Wiss snips cut with greater ease and power. They feel better in the hand and require practically no maintenance during years of service."

Like J. A. Fritch & Sons, you'll find that whatever your needs or purpose, there's a pair of Wiss snips tailored to the job. You can't miss with Wiss!



## WISS METAL MASTER "AVIATION" SNIPS

Only 10 inches long. Cut with half the effort of standard 12½ inch snips. Now with colorful vinyl handle grips (available at slight increase in cost). M-1 cuts left, M-2 cuts right . . . both make intricate scrolls and circles. M-3 for straight cuts and shallow arcs. M-5 for notching, nibbling and cutting up to 16 gauge metal. Edges serrated to prevent slipping.

*Made by Metal Craftsmen  
For Use by Metal Craftsmen*

WISS SNIPS TAKE AS MANY AS 200 STEPS  
TO MANUFACTURE, MANY BY HAND

**WISS** ...always a cut above competition

J. WISS & SONS CO., NEWARK 7, N. J.

World's Largest Manufacturer of Shears, Scissors, Pinking Shears, Skalloping Shears, Metal Cutting Snips and Garden Shears

## the editor's notebook

(continued)

cans will die. Each such average day in 1957 will bring a net increase in our population of almost 8000.

Judging by these figures, it looks as if the small business man will always be needed and if he follows good business practices, he can expect to earn good profits as his business grows with the population's demand for his services.

### This Chap's a Very Remarkable Fellow

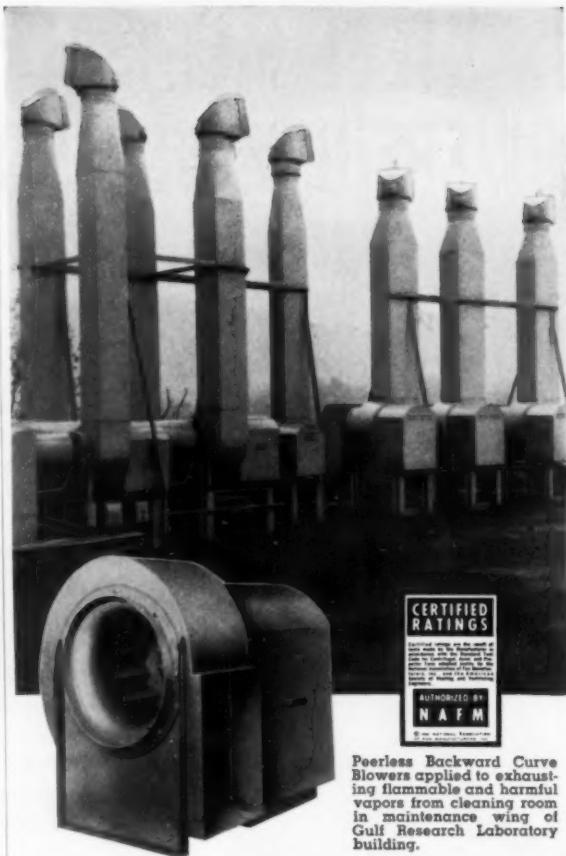
CONGRATULATIONS to Mrs. Peggy Brown, executive secretary of the Roofing and Sheet Metal Contractors' Association of Florida for turning up these specifications for a salesman:

"A salesman must be a before-dinner drinker and an after-dinner speaker; he must work all day, drive all night and appear fresh the next day. He must be able to entertain the customers' wives and sweeties and pet all kinds of stenographers — without becoming amorous.

"He must be a man's man, a ladies' man, a model husband, a fatherly father, a devoted son-in-law, a good provider, a Bohemian, a conservative, a liberal, a radical, a New Dealer, a fast dealer, a singer and an actor as well as a musician, physician, technician and magician.

"He must be a sales promotion expert, create a demand for obsolete merchandise, be a good credit manager and correspondent, attend all parties, tournaments and funerals. He must visit customers in the hospitals and jails, and in his spare time look for new business, collect delinquent accounts, do missionary work and attend sales conferences.

"He must be an expert driver, talker, liar, dancer,



Peerless Backward Curve Blowers applied to exhausting flammable and harmful vapors from cleaning room in maintenance wing of Gulf Research Laboratory building.

## Concentrated Ventilation with Peerless Blowers

Designed to quietly move large volumes of air against high resistance. Specially suited for continuous-duty exhaust in air conditioning systems of schools, laboratories, hospitals, public buildings, industrial and factory installations.

Housings, wheels, frames, and other component parts are heavier than most blowers of this type. Arc-welded housing provides a weathertight cover. Heavy, arc-welded wheels have cast iron hubs with non-slip, taper lock bushings; heavy gauge back plates.

Look for our Catalog in Sweet's  
Write today for Bulletin SDA-200 about  
Peerless Backward Curve Blowers.

**Peerless  
Electric**

Charter Member of The Air Moving and  
Conditioning Association, Inc.

FAN AND BLOWER DIVISION

**THE Peerless Electric COMPANY**

FANS • BLOWERS • MOTORS • ELECTRONIC EQUIPMENT  
1405 W. MARKET ST. • WARREN, OHIO

## the editor's notebook

(continued)

golfer, diplomat, financier and philanthropist. He should also be an authority on palmistry, chemistry, archaeology, psychology, physiology, meteorology, criminology, communism, socialism and hypnotism. Also, he must be a lover of music, dogs, cats, birds, fish, horses, blondes, brunettes, redheads and lingerie — and all this without letting it interfere with his work."

### Industry to Use More Older Workers

CAPABILITIES of older workers will have to be more fully utilized if industry is to meet successfully the challenge of a growing labor force between now and 1965, according to a survey released through the Chicago office of the National Association of Manufacturers.

The survey, which is based on government statistics, reveals that the "over 45" age group will increase by 13 percent in the next 17 years while the so-called "prime working group" — workers between 25 and 44 — will remain almost unchanged.

Another complicating factor noted by NAM in its report was the anticipated rapid growth in the 14 to 24 age group where a net gain of 33 percent is expected. Large amounts of capital may have to be expended not only to provide for new jobs, but also to further advances in automation to offset the sharp expansion of the relatively untrained and unskilled younger group if productivity is to increase at rates comparable with recent years. All of this means more planning now by the joint apprenticeship training committees so that the sheet metal workers will be available when the time comes.

## HOW TO CONVERT A CELLAR INTO A SELLER

Most heating service calls begin and end...in the cellar. Now study this picture. Note the upstairs thermostat. Sure it works, after a fashion, but it looks old fashioned and the mechanism is completely out of date. So here's a red hot opportunity to upgrade the sale.

Next time your customer calls for service, have your serviceman call upstairs, too. Many homeowners are ready for a modern room thermostat replacement. Perhaps the famous General Controls "Tempotherm" for topnotch day-night control, or the beautiful T-90 horizontal model—the modern design that harmonizes with any room.

Whatever the choice, **you can be sure** it will have built-in MERCURY SWITCH DEPENDABILITY, as do all of General Controls complete line of room thermostats for every heating or cooling need—whether gas, oil, coal or electric...warm air or hot water heating.

5 basic styles harmonize with any architectural or decorating theme

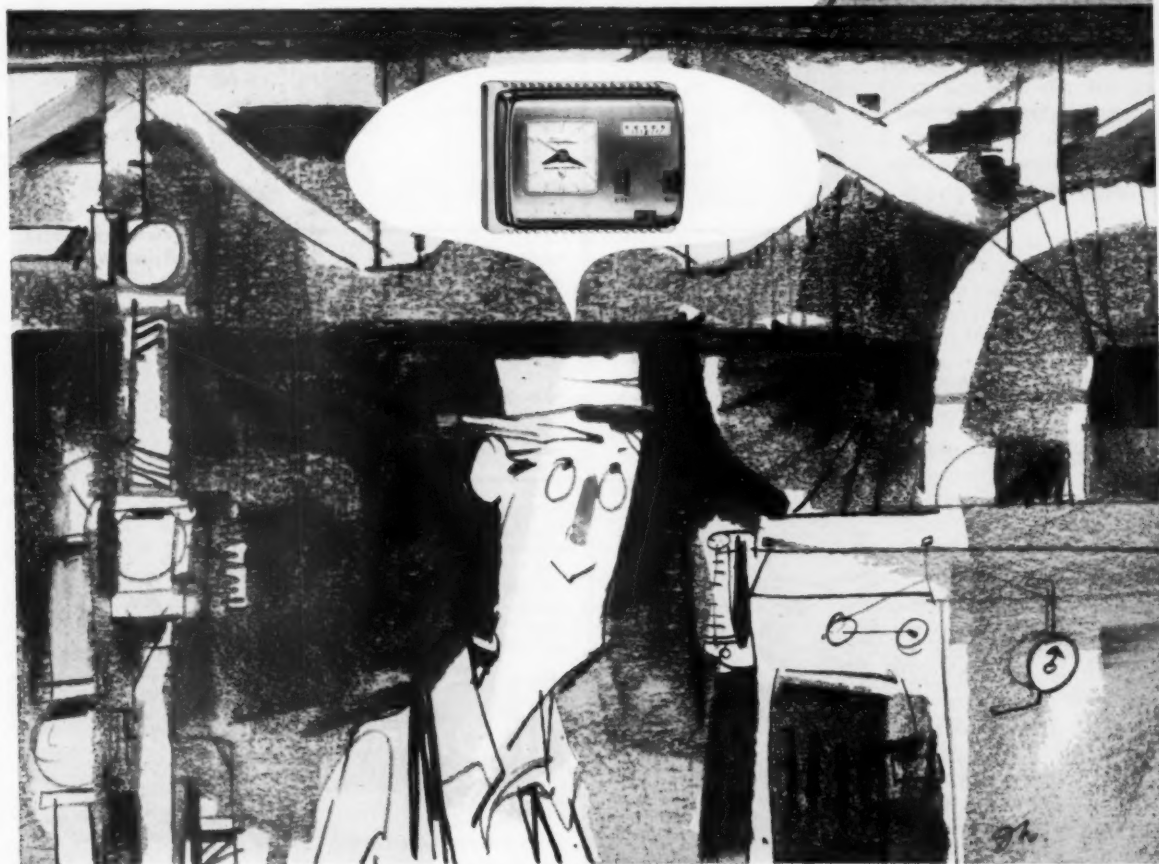


## GENERAL CONTROLS

*America's Finest Automatic Controls for Home, Industry, and the Military*

Glendale, California • Skokie, Illinois

*Five Plants—42 factory branch offices serving the United States and Canada*





## the editor's notebook

(continued)

### Why Not Try Employee Suggestion System?

I'VE TALKED with a number of sheet metal contractors who have used the employee suggestion system to advantage for a while and then, because employee interest had dropped off, discontinued the system. The value of this source of ideas has been investigated by the Reading, Pa. chapter of the Society for Advancement of Management. The chapter's findings have been made available in a manual which can be obtained for \$1.50 a copy. Just one good idea gleaned from an untapped source will repay this cost a thousand times. The foreword of the manual points out that basic standards are presented "to insure that a newly installed, or remodeled, suggestion system will be properly organized, sincerely used and controlled. Its planned use will prove helpful in the operation of an important function in management."

Copies of the Suggestion Plan Guide can be obtained by writing to Society for Advancement of Management, 74 Fifth Ave., New York 11.

### Cites Ways to Reduce Costs of Selling

TO MEET the new era of the hard sell, many companies find that they have to provide their customers with more than just a reliable product at a fair price. Customers demand more service and more attention to their special problems. This calls for a substantial increase in the selling time spent face to face with customers and prospects and a corresponding decrease in time spent in making calls on other prospects. This increases the cost per sale.

## CONTRACTORS! Here's the line designed for YOU

# Grant Wilson

**the complete line...completely dependable!**  
**All the thicknesses and weights you'll ever need**

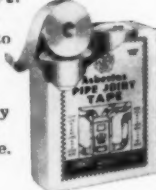
#### ASBESTOS PAPER:

A full range of thicknesses and weights, from 8 to 64 pounds per 100 square feet 18", 24" and 36" wide. 5 lb., 10 lb., 25 lb., 50 lb. and 100 lb. rolls.



#### ASBESTOS TAPE:

2 and 3 inch widths, 500 to 1500 foot packages, packed in cartons—easy to stock and use, no waste.



#### MILLBOARD:

Tough but not brittle—thicknesses from 1/16" to 1/2"—carton packed for protection until used.



#### AIR-CELL CORRUGATED:

1/8", 1/4", 3/8" and 1/2" thick with or without foil backing—37" wide rolls, packed in cartons.



#### DUX-SULATION:

The world's best duct insulation—1/2" and 1" thick. Costs a little more, worth a lot more.



#### VIBRA-STOP:

The Metal/Fabric flexible duct connection that stops noise. Two weights of metal, both canvas and asbestos types.



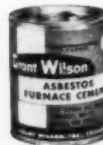
#### FLEXI-DUCT:

4", 6" and 8" widths of selvage edged flexible asbestos woven duct connectors. Low cost, meets Underwriters' requirements.



#### FURNACE CEMENT:

Smokeless, odorless, acid proof and fireproof, from 1 pound cans to 100 pound steel drums—a perfect, permanent metal-to-metal seal.



#### COMBUSTION CHAMBERS:

3/4 to 12 gallons per hour—quick installation, maximum combustion efficiency and long life.



**THIS "BUYING & SELLING GUIDE" TELLS YOU EVERYTHING YOU NEED TO KNOW ABOUT ASBESTOS OR INSULATING MATERIALS. GET A COPY FROM YOUR WHOLESALER —IT'S FREE!**



# Grant Wilson inc.

ASBESTOS and INSULATING MATERIALS

141 W. JACKSON BLVD.

CHICAGO 4, ILLINOIS

## the editor's notebook

(continued)

Some companies stretch the salesman's selling time by increasing sales research. They are using more and more advertising to locate prospects for the salesman.

A number of companies have provided salesmen with more selling time by turning over technical details of the sale to a sales engineer. He can talk to the customer by phone and save the salesman's time and, in some instances, a trip.

Only a few companies have made a systematic study of how salesmen spend their time. But those that have done so report considerable benefits both to the salesmen and to the company. Despite the necessary intangibles of selling, such a study pinpoints the areas of wasted time, evaluates various sales techniques and sales aids, measures the accuracy of sales territories, provides ratios of sales effort to orders received, and many other facets of the selling job.

### Decries Price Emphasis In Sales Approach

THIS POINT, recently made by H. B. Price, Jr., as he addressed the Major Appliance Div. of the National Electrical Manufacturers Association, certainly rings true. He said:

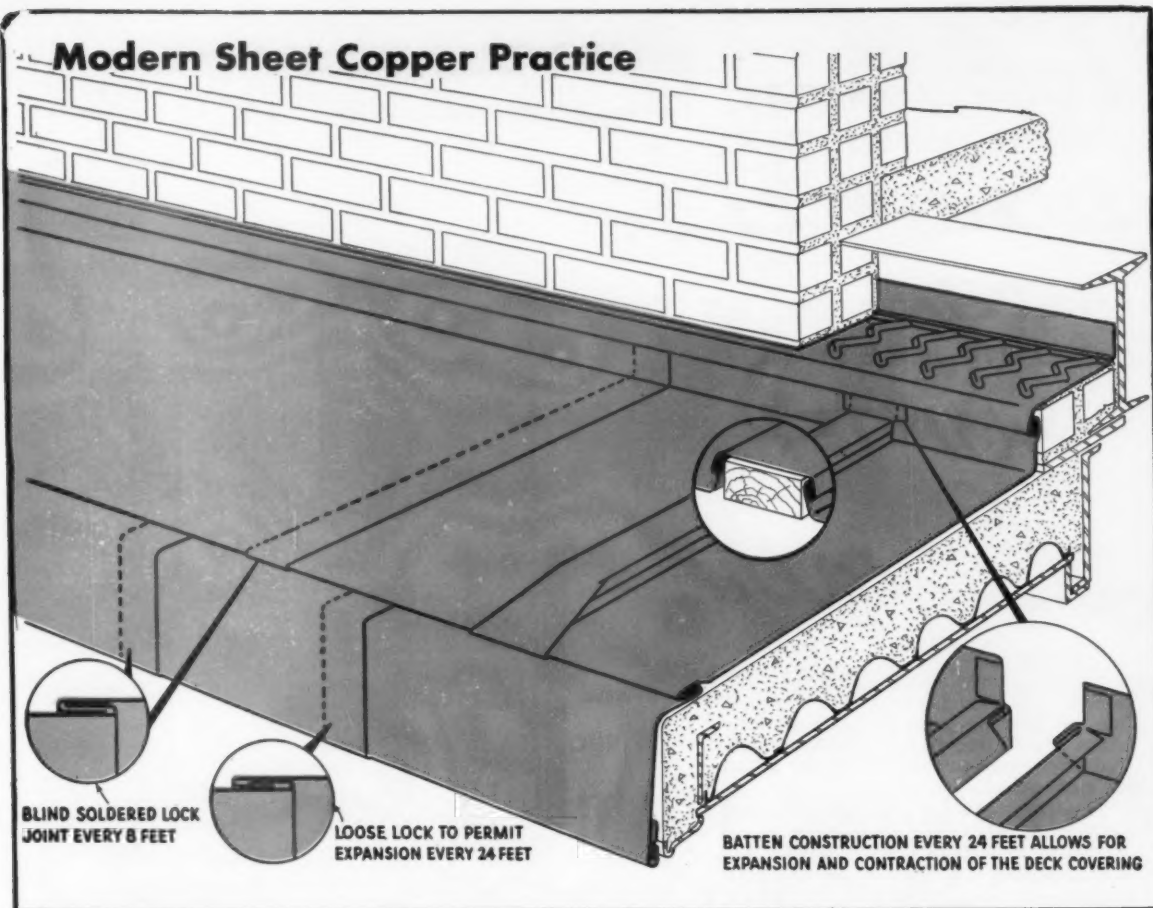
"With all the splendid and imaginative new features and sales devices carried by our current merchandise, it is a shame and a condemnation of both our integrity and our intelligence that such a large percentage of our printed and sales message to the public should be based on price rather than on features."

*Clyde M. Barnes*

EDITOR



## Modern Sheet Copper Practice



## Cut cooling load with copper-faced sunshades

THE trend toward larger window area and summer air conditioning has made the sunshade an ever



Typical application of copper-faced sunshades in an apartment building.

more important feature in architecture. In areas where freezing temperatures occur, it is advisable to cover the sunshade with copper.

The drawing above shows practices recommended in the design of a 20-ounce cornice-temper copper covering, interlocked with ANACONDA Through-Wall Flashing for positive, long-life protection. This is one of the new drawings shown in "Modern Sheet Copper Practices," issued by The American Brass Company.

**AWARD WINNER.** The 104-page book was awarded the Certificate of Ex-

ceptional Merit in the 1956 Building Products Literature Competition sponsored by The American Institute of Architects and The Producers' Council, Inc. "An exceptionally comprehensive and well-arranged informative literature illustrating and describing the correct uses of sheet copper for various roofing and flashing purposes."

For your free copy write to The American Brass Company, Waterbury 20, Conn. In Canada, Anaconda American Brass Limited, New Toronto, Ont. Ask for Anaconda Publication C-1.

0029

**For protection that lasts, use**

**ANACONDA<sup>®</sup> SHEET COPPER**

**BUILT TO MEET  
YOUR NEED FOR  
EXCELLENCE!**

**PRICED TO MEET  
YOUR NEED TO  
COMPETE!**

**Luxaire**  
®

Whether you are a dealer making installations or the manufacturer of a complete line of Heating and Air Conditioning Units, it's putting *quality where it counts* that gives your customers a better job at the right price!

The installer who is successful in appealing to today's price-conscious buyer is offering more than just a low price. He is endeavoring to provide excellent installations — at low prices!

Luxaire has long been aware of your need to compete with both price and superior equipment — and, has done something about it. Year after year — by increasing and improving manufacturing facilities, by developing new, better and less complicated designs, and by concentrating on sturdier, more durable construction — Luxaire prices have been held down, while Luxaire excellence increased!

Now, when the chips are down, and you must compete with price as well as excellence, you are in a position to meet price competition with the excellence of Luxaire!

Call your Luxaire jobber, today!

### The All-New Assembled and Wired Winter A. C. Units

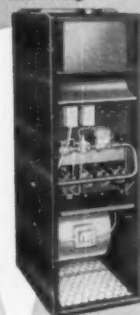
Now available! Gas-Fired with from 75,000 to 150,000 BTU Input, as either Winter Air Conditioners or Counterflow Units. Oil-Fired! With 78,400 and 112,000 BTU at Bonnet. These new Luxaire Furnaces are setting a new standard of excellence with handsome

appearance, heavier construction and outstanding performance. Yet, the price is sensationally low!

Winter Air  
Conditioner  
with Accessory  
Return Air  
Cabinet  
installed  
at rear.



Gas Counterflow  
Unit with front panels  
removed, showing  
completeness of  
factory assembly  
and wiring.



**INSTANT  
EYE  
APPEAL**

**EXCELLENT  
PERFORMANCE**

Oil Winter A. C.  
Unit. Complete  
interior wiring of  
Burner Relay Circuit  
is done at the Factory.  
None remains to be  
done on the job!

**PREMIUM  
CONSTRUCTION**

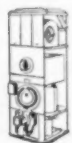
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Units*

**Plus... Down-to-Earth Competitive Prices!**

### A UNIT FOR ANY JOB... EVERY UNIT A DELUXE MODEL



Basement Type  
Winter A. C. Units  
that burn either  
Gas or Oil



Utility or  
Counterflow  
Units that  
burn either  
Gas or Oil



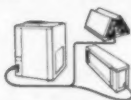
Gas or Oil  
Fired  
Gravity  
Furnaces



Horizontal  
Furnaces  
4 Gas Sizes  
4 Oil Sizes



Air or Water  
Cooled Year  
Round A. C.  
Units that  
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Gas or Oil



Air Cooled  
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Compressor  
Units with  
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(Plenum Type)  
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## Fast, dependable motor service is as close as your telephone



You can sell heating equipment to your customers with *extra* assurance that they'll be satisfied and *stay* satisfied when you specify General Electric motors. Here are TWO important reasons why:

1. **"YEARS-AHEAD DESIGN"** features lighter weight, smaller size (for instance, a 1/12-hp unit weighs only 10 lbs.). You'll find that they're easier to handle and install. And the double lubrication life of General Electric motors plus an insulation system which damp basements can't harm mean less maintenance, longer service life.

2. **THE G-E SMALLER MOTOR SERVICE STATION** near you will provide fast repair of in- or out-of-warranty General Electric motors when the need arises. Using only factory-made parts and factory-approved procedures, General Electric Small Motor Service Stations have built a reputation for fast, reliable motor service. They also carry large stocks of replacement motors for added flexibility.

To get all the benefits of G-E motor quality and service, specify General Electric motors on the heating equipment you order. And contact your G-E Small Motor Service Station today—he's listed here and in the "yellow pages." 702-62

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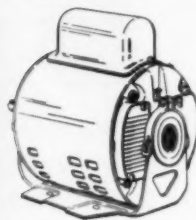
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FOLLOWING PAGES



**AUTHORIZED  
SMALL MOTOR  
SERVICE STATION**

# GET ACQUAINTED WITH YOUR NEAREST G-E SMALL MOTOR SERVICE STATION...

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Mobile  
Montgomery  
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Birmingham Elec. & Mfg. Co., 7-18th, SW, ST 7-4652  
Elec. Motor Service, Inc., 606 S. 32nd St., AL 4-3106  
Decatur Elec. Service, 105 W. Moulton St., 2162  
Alabama Elec. Co., Headland Road, 5-41010  
Bowden Elec. Co., Inc., Box 881 (Rainbow Dr.) Liberty 3-4272  
Elec. Motor Sales & Serv., 701 5th Ave. West, JE 2-8811  
Russell Elec. Co., 1315 S. Washington Ave., HE 3-7475  
Standard Elec. Machinery Corp., 515 N. Decatur, AM 4-2276  
Louis Cottrell Elec. Co., 1001 S. Montgomery Ave., EV 3-3763  
Freeman Elec. Co., 1616 25th Ave., Plaza 8-5182

## ARIZONA

Phoenix  
Prescott  
Tucson  
Yuma

New State Electric Co., 447 Jackson Street, Alpine 3-5023  
Arizona Mining Supply Corporation, P. O. Box 110, Main 310  
Ranch, Home & Supply, 329 E. Sixth Street, Main 4-1852  
Longward Electric Motors, 709 Eight Street, Sunset 2-2535

## ARKANSAS

Fort Smith  
Little Rock

Interstate Electric Co., So. 5th & E. St., SU-2-9139  
Mason Electric Company, 201 Vine Street, 7407

## CALIFORNIA

Bakersfield  
Chico  
Eureka  
Fresno  
Hanford  
Lancaster  
Long Beach  
Los Angeles  
Los Angeles  
Los Angeles  
Los Angeles

Electric Motor Works, 803 Inyo Street, FA 3-1783  
Butte Pump & Motor Works, 844 Broadway, Fireside 2-3551  
Senn Elec. Co., 1801 Fairfield, Hillside 3-0416  
Elec. Motor Shop, 253 Fulton St., Adams 3-1154  
Schafer's Pump & Motor Co., 108 W. Sixth, Ludlow 4-3301  
Magney Electric Motors, 663 West Ave. I, Whitehall 2-0421  
Delta Electric Motor Co., 2224 Atlantic Ave., Garfield 4-2824  
AAA Elec. Motor Serv., 1346 Venice Blvd., Richmond 9-2367  
Electrical Appliance Serv. Co., 1441 E. Wash. Blvd., RI 7-1555  
G-E Service Shop, 6900 Stanford Ave., Pleasant 2-6136  
Hoyt & Sweet, 1132 E. Twelfth Street, Tucker 3169  
Smallcomb Electric, 1120 S. Main Street, Richmond 7-0221  
United Serv. & Supply, Marvel Card. Sales Co., 2001 Figueroa, RI 7-6351  
Kinney Electric, 818 Fifth St., Sherwood 2-0151  
Stanislaus Elec. Motor Wks., 504 W. River Rd., Lambert 3-8269  
General Electric Serv. Shop, 3400 Wood St., Olympic 3-9474  
Ontario Elec. Motor Shop, 1168 W. "A" St., LY 9-7667  
Pompey Elec. Motor Co., 25 E. Union Street, RYan 1-7777  
M-D Electric, Inc., 1344 S. Reservoir St., LY 8-8661  
Coast Elec. Co., 1783-85 Broadway, Emerson 8-2833  
G-E Service Shop, 99 N. 17th St., Gilbert 1-0762  
VanAlstyne & Son Elec., 2512 Broadway, Gladstone 7-9835  
Salinas Arm. & Mtr. Wks., 321 N. Main St., Harrison 4-3741  
Hunt & Van Slyke, 572 Court St., 4-27183  
Electrical Appl. Serv. Co., 302—17th St., Belmont 9-1237  
Frank W. Sloan Co., 102 S. 19th St., Belmont 9-5174  
G-E Service Shop, 1098 Harrison St., Douglas 2-3740  
Roy M. Butler Elec., 510 W. San Fernando St., Cypress 3-8227  
Baxendale Elec., 3035 Broad St., Liberty 3-0496  
North Bay Elec. Wks. Inc., 335 Francisco Blvd., Glenwood 3-6132

Santa Ana  
Santa Cruz  
Santa Monica  
Santa Rosa  
Stockton  
Tulare  
Van Nuys  
Visalia

Santa Ana Elec. Motor Serv., 1212 W. First St., KI 3-4346  
Wilbanks Elec. Mtr. Serv., 431 May Ave., Garden 3-4932  
Electra Serv. Company, 3225 Pico Blvd., EXbrook 5-5229  
Leete Elec. Motor Co., 930 Santa Rosa Ave., Santa Rosa 18  
Stockton Arm. & Mtr. Wks., 646 S. Calif. St., Howard 6-9625  
Turnpseed Elec. Serv., Inc. 340 E. Inyo, Tulare 6-3401  
Walmac Elec. Motor Serv., 5923 Kester Ave., State 5-3479  
Langdon Elec. Motor & Pump Co., 410 E. Main St., Redwood 2-0490  
Industrial Motor Elec. Co., 431 Community Lane, Mohawk 2-6774

## COLORADO

Colorado Springs  
Denver  
Denver  
Grand Junction  
Pueblo

Electric Motor Co., Inc., 113 S. 28th St., ME 5-2945  
G-E Service Shop, 3533 Larimer St., KE 4-7171  
United Elec. Mtr. Serv. & Supply Co., 4500 Jackson, DE 3-1402  
Roberts Electric Motor Serv., 701 N. First Street, 450  
Johnson Electric Co., 324 South Union Ave., LI 3-1746

## CONNECTICUT

Hartford  
New Haven  
Stamford

Hartford Elec. Mach. Co., 17 Francis St., Adams 3-1267  
Bar-Craft Elec. Co., 571 State St., Main 4-9815  
Palmer's Elec. Mach. & Foundry, 533 Pacific, Fireside 8-7378

## DELAWARE

Millford  
Wilmington

Elec. Equip. & Maint. Co., Rehoboth Blvd., Rt. 2 Box RI, 4205  
Wesley Jagger, Inc. 517 Jefferson St., Olympia 2-4645

## DISTRICT OF COLUMBIA

Washington

Central Arm. Wks., Inc. 625 D. St., N.W., National 8-3660

## FLORIDA

Daytona Beach  
Ft. Lauderdale  
Ft. Walton Beach  
Jacksonville  
Key West  
Miami  
Orlando  
Panama City  
Sarasota  
St. Petersburg  
Tallahassee  
Tampa  
Tampa  
West Palm Beach

Alford Elec. Motor Repairs, 138 S. Campbell St., CL 2-3573  
Jack's Elec. Motor Repair, 19 N.W. Fifth St., JA 2-6733  
Gibson Elec. Co., 82 N. Florida Ave., CH 3-3223  
Turner Elec. Works, 1020 E. 8th St., EL 3-3661  
Keywest Elec. Repair Co., 611 Front St., Cypress 6-8549  
Florida Elec. Mtr. Co., 235 N.W. Second Ave., FR 4-6147  
Link's Elec. Motor Serv., 411 S. Main St., MA 9-2478  
Orlando Arm. Wks., Inc., 600 W. Cent. Ave., 3-0555  
REMSCO, Inc., 740 W. 15th St., SE, Box 109, Sunset 5-5208  
Ed's Electric Service, 1462 Fourth St., RI 7-7934  
Die Forder Elec. Engrg. Co., 249 7th Ave. South, 7-5312  
Good Luck Elec. Motor Serv., 1208 S. Adams St., 2-3246  
Laycock Arm. Wks., Inc. 102 W. Fortune St., 2-1418  
G-E Service Shop, 19th & Grant Sts. 4-5765  
Sutcliffe's Elec. Co., 2nd and Olive Sts., Temple 2-7212

## GEORGIA

Albany  
Athens  
Atlanta  
Atlanta (Chamblee)  
Atlanta  
Augusta  
Columbus  
Macon  
Savannah  
Valdosta

Georgia Elec. Co., 1500 Gilliland Rd., HE 2-0581  
Athens Industrial Elec., 386 W. Broad St., LI 3-9609  
Cleveland Electric Co., 557 Marietta St., N.W., Jackson 4-8422  
G-E Service Shop, 4639 Peachtree Indust'l Bldg., GL 7-2501  
Zuber Elec. Co., 1392 S. Gordon St., S.W., Plaza 5-4578  
Elec. Equip. Co., 1441 Greene St., 2-6686  
White Elec. Const. Co., 1325 4th Ave., FA 3-5641  
Wilson Electric Co., Inc., 537 Pine St., 2-8656, 3-4072  
Elec. Machinery Co., 126 W. Bay St.  
Valdosta Armature Works, 606 W. Hill Ave., 1732

## ID. HO

Boise  
Idaho Falls  
Lewiston

Missman Electric Co., P.O. Box 5052, 2-5211  
Rossiter Electric Sales & Serv. Co., Airport Road, JA 2-2135  
E. D. Smith & Son, 410 Miller St., Lewiston 3-2021

## ILLINOIS

Aurora  
Bloomington  
Canton  
Chicago

Connell Elec. Co., 905 Illinois St., 6-2451  
Elec. Motor Repair Co., 223 E. Front St., 3-1640  
Kraell Elec. Co., 580 E. Linn St., 1205  
Ballantine Auto Pk. & Serv. Corp., 723 W. 66th St., WE 6-6249  
Complete Elec. Motor Repair Co., 3658 N. Lincoln, WE 5-0700  
G-E Service Shop, 4360 W. 47th St., LA 3-4231  
J. Avena Motors, 2445 N. Laramie Ave., NA 2-3844  
G-E Serv. Shop, 2225 E. Logan, 8-2512  
Illinois Electric Works, 1304 Missouri Ave., UP 3-8742  
R & B Electric Co., 410 W. Fayette Ave., 306  
Rainbow Elec. Co., 2604-11 Green Bay Rd., DA 8-6363  
Electric Serv. & Sales, 66 N. Michigan St., 2-8278  
Arthur Motors Works, 332 S. Washington, 2-3118  
Dawser Elec. Machry Works, 510 S. First St., 190  
Foremost Elec. Co., 918 South Adams, 6-1317  
M & J Elec. Co., 308 Walnut St., 4-3922  
Richards Elec. Co., 517 S. 5th St., Baldwin 2-7154  
Hills Motors, 307 1st Ave., Main 305  
Elec. Apparatus Co., 1724 7th Ave., 5-4170  
Rockford Elec. Equip. Co., 704 S. Wyman St., 4-8697  
Elec. Motor Shop, 203 E. Jefferson, 6524  
Dels' Elec. Motor Serv., 2504 W. Grand Ave., ON 2-3530  
Sander Elec. Co., 1005 W. Main St., 19

## INDIANA

Bloomington  
Evansville  
Fort Wayne  
Fort Wayne  
Gary  
Hammond  
Huntington  
Indianapolis  
Indianapolis  
Lafayette  
Muncie  
Richmond  
South Bend

Owens Elec. Co., 116 So. Madison Ave., 4351  
Swanson-Nunn Elec. Co., 420 So. East Eighth St., HA 5-3321  
Wayne Elec. Co., 213 West Brackenridge St., Anthony 9231  
G-E Service Shop, 606 W. Superior St., Anthony 3323  
Electro-Mechanical Prod., Inc., 1047 Taft St., Turner 5-4789  
Hammond Elec. Co., 6036 Calumet Ave., Westmor 1-3400  
Christman Motor Repair, 1544 No. Jefferson St., 1600  
G-E Serv. Shop, 1740 W. Vermont St., Melrose 2-8471  
McBroom Elec. Co., 3301 N. Illinois St., WA 5-5347  
Kirby Risk Elec. Motors, Inc., 313 N. Third St., 2-8446  
Motorcraft, 1219 South Walnut St., AT 2-4272  
REMSCO, Inc., 1541 S. Ninth St., 2-3764  
Kantz Wagner Elec. Co., 516 N. Michigan St., CE 3-8251

## IOWA

Bettendorf  
Burlington  
Cedar Rapids  
Clinton  
Davenport  
Des Moines  
Dubuque  
Iowa City  
Mason City  
Sioux City

G-E Service Shop, 1039 State St., 5-0231  
Bartel's Elec. Mtr., 901 S. Main St., PL 4-7202  
Elec. Motors, Inc., 353 Second Ave., S.W., EM 3-8141  
Clinton Elec. Wks., Junction Highways 30 & 67, CH 3-2623  
Industrial Engrg. & Equip. Co., 702 Hicktown Rd., 3-9721  
Elec. Engrg. & Equip., 1202 Walnut St., AT 2-0431  
Fixler Elec., 17 Bluff St., 2-5297  
Electric Motors, Inc., 126 Lafayette, 8-3669  
Zack Bros. Elec. Co., 306 2nd St. S.W., GA 4-3211  
Paul Elec. Co., 117 Fourth St., 5-1605

## KANSAS

Hutchinson  
Sulzica  
Wichita

Hilton Elec. Co., 122 E. Sherman St., Mohawk 2-5780  
Central Kansas Elec. Mach. Co., 912 W. North St., 7-0851  
Mears Elec. Co., 1227 E. Waterman, AM 2-3081



## KENTUCKY

Lexington  
Louisville  
Owensboro  
Paducah

United Serv. Co., 176 East High St., 4-1818  
G-E Service Shop, 3900 Crittenden, Twinbrook 6-0303  
Owensboro Armature Wks., 609 East 14th St., Murray 3-9855  
England Elec. Serv., 123 Broadway, 2-2600

## LOUISIANA

Alexandria  
Baton Rouge  
Lake Charles  
Monroe  
Monroe  
New Orleans  
New Orleans  
New Orleans  
Shreveport  
Lafayette

Electric Motor Serv., 1123 Washington St., 2-5645  
Capital Armature Wks., 7620 Scenic Hwy., Elgin 7-4867  
J & J Armature Works, 1612 First St., HE 9-8849  
Monroe Armature Wks., 2019 DeSiard St.  
Paulan's Elec. Co., 501 Morris Ave., FA 3-7701  
G-E Service Shop, 2815 N. Robertson St., Valley 6651  
New Orleans Arm. Wks., 2311 Tchoupitaulas St., Canal 9566  
United Elec. Motors, Inc., 936 Girard St., Raymond 1194  
Carl Pans Elec. Co., 3538 Mansfield Rd., 3-7193  
Judice Elec. Mtr. Shop, Scott Road, CE 4-2849

## MAINE

Brewer  
Lewiston  
Westbrook

Page Elec. Engineering Co., Ellsworth Rd, RFD 5, 6333  
Shultz Elec. Wks., 81 East Ave., 4-4411  
Shultz Elec. Wks., 821 Main St., Ulster 4-2501

## MARYLAND

Baltimore  
Hagerstown  
Salisbury

G-E Service Shop, 920 E. Fort Ave., Mulberry 5-6500  
Hagerstown Equip. Co., Memorial & Maryland, Regent 3-7600  
Salisbury Elec. Co., Delmar Rd., Salisbury 9310

## MASSACHUSETTS

Easton  
Boston  
Brookton  
Cambridge  
Fitchburg  
Lowell  
Lynn  
New Bedford  
Pittsfield  
Quincy  
Springfield  
Springfield  
Worcester

Sandman Elec. Co., 660 Parker St., Highlands 2-7600  
G-E Serv. Shop, 3960 Mystic Valley Pkwy., Mystic 6-9600  
Brookton Ind. Elec. Co., 456 N. Main St., Brookton 8736  
Empire Elec. Co., 6 Portland St., Kirkland 7-6880  
Shepard & Parker, 27 Howard St., Fitchburg 3-3907  
White Elec. Motors, 430 Broadway, Glenview 8-6336  
E. R. Sullivan, 22 Union St., Lynn 2-8124  
Northern Electric Motor Co., 9 North St., Wyman 3-1100  
Elec. Supply & Repair Co., Inc., 164 Waconah St., 2-1539  
Hancock Elec. Motor Serv., 455A Hancock, Granite 2-5789  
Associated Elec. Co., Inc. 521 State St., Republic 9-1078  
Elec. Motor Repair, 11-31 Park St., Republic 6-3684  
Bigelow Elec. Co., Inc., 128 Chandler St., Pleasant 4-4158

## MICHIGAN

Adrian  
Battle Creek  
Bay City  
Detroit  
Detroit  
Detroit  
Flint  
Grand Rapids  
Holland  
Jackson  
Kalamazoo  
Lansing  
Manistee  
Marquette  
Muskegon  
Pontiac  
Port Huron  
Saginaw  
Sault Saint Marie  
Sturgis  
Traverse City

Lenawee Elec. Co., 833 Treat St., Colfax 5-7195  
Commercial Elec. Co., 333 Hamlin Ave., Woodward 2-8789  
Smith Maynard Elec., 1108 N. Water St., Twinbrook 3-6516  
G-E Serv. Shop, 5950 Third Ave., Trinity 2-2600  
Jay Elec. Co., 5664 S. Jean Ave., Walnut 1-0400  
United Elec. Motor Serv., 13845 Elmira St., Texas 4-6966  
Moore Bros. Elec. Co., 2602 Leith St., Cedar 2-2148  
Clement Elec. Dist. Co., 223 Erie St., N.W., Glendale 6-7271  
Hamilton Mfg. & Supply Co., P.O. Box 212, 6-6536  
Monarch Elec. Co., 4114 Page Ave., State 2-9351  
Kalamazoo Elec. Mtr. Serv., 658 E. Vine St., Fineside 5-7802  
Barker-Fowler Elec. Co., 506 N. Larch St., Ivanhoe 4-4406  
Schinke Elec. Co., 316 Parkdale Ave., 1332  
Brant & Strong Serv., 19105 Allen Rd., Dunkirk 3-6740  
Whittaker Elec. Co., 231 Diana Ave., 6-2121  
Hodges Mtr. & Pump Supply, 500 Auburn, Federal 2-7473  
Flinchbaugh Elec. Co., 762 Water St., Yukon 5-7197  
Henry Elec. Co., 1716 S. Jefferson, Pleasant 3-5457  
Roemer Elec., 213 W. Portage Ave., Melrose 2-2612  
Sturgis Elec. Mtr., 703 N. Centerville Rd., Box 255, Tel. 4  
Northwestern Elec. Serv. Co., 428 E. Front St., 205

## MINNESOTA

Duluth  
Mankato  
Minneapolis  
Minneapolis  
Moorhead  
Rochester  
Winona

Mielke Elec. Wks., Inc., 922 E. Superior St., RA 4-8831  
Mankato Elec. Co., 120 Walnut St., 3269  
G-E Serv. Shop, 2025 49th Ave. N., JA 9-9502  
W. C. Jorgensen Co., 240 11th Ave., PE 8-8381  
Horvick Elec. Motor Co., 305 Main Mhd., 3-1566  
E. T. Watkins Elec. Mtr. Serv., 209 S. W. 5th St., 5779  
Lackore Elec. Mtr. Rep., Inc., 120 W. 2nd St., 3103

## MISSISSIPPI

Hattiesburg  
Jackson  
Meridian  
Natchez

Gandy Elec. Co., 1516 N. Main St., JU 4-5274  
Power Elec. Co., Inc., 1920 N. Mill St., 5-8361  
Peller Elec. Motor Service, 2125 Grand Ave., 3-2881  
Power Elec. Co., Inc., 418 Pine St., 5212

## MISSOURI

Cape Girardeau  
Joplin  
Kansas City  
Kansas City  
Moberly  
Springfield  
St. Joseph  
St. Louis  
St. Louis

Missouri Elec. Wks., South Highway 61, 5-6603  
Elec. Motor Supply, 215 Wall St., MA 4544  
Hataway Elec. Motor Serv., 1819 McGee, HA 1-6440  
G-E Service Shop, 3525 Gardner, VI 2-9745  
Elec. Motor Serv., 515 Coates St., 196  
Wheat Elec. Co., 940 E. Trafficway, 5-1626  
McAdoo Elec. Co., 507 S. 7th, 2-1138  
Commercial Elec. Mtr. Serv., 3121 Wash. Ave., JE 1-3327  
G-E Service Shop, 1115 East Road, GE 6-4343

## MONTANA

Billings  
Butte  
Missoula  
Great Falls

Carburetor & Elec. Co., 504 N. 29th St., 2-2129  
Johnston Elec. Shop, 212 S. Montana St., 2-4983  
Industrial Elec. Co., 123 W. Alder St., 3-3723  
Elec. Motor Serv., 903—10th Ave. North, 4-4395

## NEBRASKA

Beatrice  
Grand Island  
Hastings  
Lincoln  
Omaha  
Scottsbluff

Sprague Elec. Serv., 114 N. Third St., 252  
Motor Engrg. Works, W. Highway 30, 147  
Hatten Elec. Serv., 206 W. 2 St., 2-2305  
Collin Elec. Motor Serv., 127 S. 19th St., 2-7505  
Schneider Elec. & Equipment Co., 11048 Parnam, WE 5550  
H. M. Brown Elec. Co., 706 S. Broadway, 1367

## NEVADA

Las Vegas  
Reno

Hank Elec. Motor Serv., 13 W. Charleston Blvd., DU 2-3450  
Brown-Milberry, Inc., 322 N. Sierra, Box 1431,  
Fairview 2-5757

## NEW HAMPSHIRE

Manchester

Wright Elec., Daniel Webster Highway, N., National 4-4793

## NEW JERSEY

Atlantic City

David Park, New York Ave. & Abscon Blvd.,  
Atlantic City 4-8058  
Appliance Motor Serv., 16 N. 3rd St., Humboldt 3-6676  
Pilot Elec. Co., 333 State Highway 35, Prospect 5-0121  
Electric Motors & Parts Corp., 392 Clinton Ave.,  
Bigelow 3-3918  
A. Bishop Elec. Motor Exch., 318 Commercial Ave.,  
Kilmer 5-6446  
Newton Elec. Motor Serv., Swartswood Rd., Newton 1420  
G-E Service Shop, 6001 Tonnelle Ave., Market 34740  
Reliable Elec. Mtr. Repair Co., 19-21 California St.,  
Armory 47756  
M. N. Eisenhardt, 6001 Crescent Blvd., Woodlawn 4-6944  
S & M Elec. Mtr. Repair, Inc., 28 Commerce St.,  
Export 2-8713

## NEW MEXICO

Albuquerque  
Carlsbad

Electric Serv., Inc. 1007 Bridge Blvd. S.W., 2-9447  
Industrial Elec. Co., 838 S. Canyon St., TU 7-1122

## NEW YORK

Albany  
Auburn  
Binghamton  
Bronx (NYC)  
Brooklyn (NYC)  
Buffalo  
Buffalo  
Elmira  
Glens Falls  
Islip Terrace (L.I.)  
Jamestown  
Kingston  
Long Island City  
Mt. Vernon  
N. Tonawanda  
Plattsburgh  
Potsdam  
Poughkeepsie  
Rochester  
Schenectady  
Syracuse  
Troy  
Utica  
Watertown  
W. Hempstead

Commodore Elec. Co., Inc., 43-45 Liberty St., 4-9846  
Auburn Armature Co., 291 Grant Ave., 3-5388  
Walter J. Rider Co., 320-326 Water St., 3-5329  
Elec. Mtr. Serv. & Parts, 2231 Westchester, Talmadge 3-0314  
Inter-Bore Elec. Motor Co., 2970 Atlantic Ave., Midway 7-7200  
G-E Service Shop, 318 Urban St., HU 5849  
S & S Elec. Repair Shop, Inc., 2470 Seneca St., WO 1232  
Ind'l & Domestic Elec. Motors, 1417 College Ave., 3-2741  
J. T. Barnes Elec. Motor Serv., 49 Park St., 2-5031  
A. Delta Elec., 50 Sunrise Highway, Juniper 1-0732  
Westburgh Elec., Inc., 100 East First St., 3-1722  
P. J. Gallagher, 17 Spring St., Kingston 3817  
Morris & Armatures, Inc., 25-10 38th Ave., Exeter 2-3523  
H. A. Schreck, Inc., 140 E. Third St., Mt. Vernon 8-1296  
Industrial Motor Serv., 207 Vandervoort St., LU 4282  
Manion Elec. Motor Serv., 7 Riley Ave., 574  
Tennant Elec. Motor Serv., Inc., 142 Maple St., 2827  
H. A. Schreck, Inc., 70 Winnie Ave., Globe 4-3560  
T. H. Green Elec., Inc., 31 N. Water, HA 6-9840  
Burrett Elec. Serv., Inc., 108-116 Henry St., DI 6-2291  
M. H. Salmon Elec. Co., Inc., 952 W. Genesee St., GR 1-4430  
Tri-State Elec. Motors, Inc., 351-55 Second St., AS 2-4250  
Mather, Evans & Diehl Co., Inc., 509 Lafayette St., 4-6165  
Person and Timmerman, 429 Arsenal St., 2127  
Auth. Elec. Motor Corp., 506 Hempstead Tpke.,  
Ivanhoe 6-5500

## NORTH CAROLINA

Charlotte  
Goldsboro  
Greensboro  
Greenville  
Laurinburg  
Raleigh  
Rocky Mount  
Wilmington

G-E Serv. Shop, 2328 Thrift Rd., ED 4-1644  
Live Wire Elec. Co., 110 N. James St., 117  
Elec. Serv. & Sales, Inc., 1421 Battleground Ave., BR 5-5321  
The Elec. Motor Shop, 400 Boyd Ave., Greenville 3170  
Elec. Equip. Co., 212 N. Main St., CR 6-2141  
Elec. Equip. Co., 2526 Hillsboro St., TE 2-2039  
Faulkner Elec. Serv., 820 Gold St., Rocky Mount 6-5863  
Elec. Repair & Serv. Co., 107 S. Front St., 2-6811

## NORTH DAKOTA

Minot

Minot Motor Rewinding Co., 707 Fourth Ave., S.E., 2-0224

## OHIO

Akron  
Ashland  
Athens  
Cambridge  
Canton  
Cincinnati  
Cincinnati

Hunnell Elec. Mtr. Repair Co., 621 S. High St., Portage 2-8646  
Smith Elec. Co., Seventh & Skarman St., 2-7671  
Elec. Motor Serv., 102 W. Union St., 3-1521  
Brill Elec. Mtr. Repair, 710 N. 5th St., 2-4111  
Jackson-Bayley Elec. Co., 825 Navarre Rd., S.W.,  
Glendale 5-9421  
G-E Service Shop, 444 W. Third St., Garfield 1-1455  
Matlock Elec. Co., 1456 Harrison Ave., Grandview 1-4090

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Springfield  
Toledo  
Youngstown

George Baumgardner, 11610 Superior Ave., Randolph 1-0958  
G-E Service Shop, 4966 Woodland Ave., Endicott 1-4464  
Hennings Elec. Co., 11106 Lorain Ave., Winton 1-9490  
United Elec. Mtr. Repair, Inc., 1830 E. 23rd St., Main 1-4380  
American Elec. Works, 191 N. Grant Ave., Capitol 4-9075  
G-E Service Shop, 2128 Eakin Rd., Broadway 4-1131  
M & R Elec. Motor Serv., 1516 E. Fifth St., Hemlock 6282  
Electrical & Mechanical Serv. Co., 600 W. St., 2742  
American Elec. Wks., 120 W. Sixth St., Olive 4-0072  
Arr Elec. Motor Serv., 1701 E. 4th St., 9-3199  
Elec. Power Serv. Co., 214 Connecticut Ave., Atlantic 8-4133  
Phoenix Elec., 225 Central Ave., Lafayette 2-0451  
Osum Elec. Repair, 846 N. Main St., 2-7011  
Brush Elec. Co., 1838 Vinton Ave., Elmwood 3-1920  
Sandusky Elec. Corp., 1516 Milan Rd., 2794  
Springfield Armature Wks., 110 N. Jackson St., Fairfax 3-7341  
G-E Service Shop, 405 Dearborn Ave., Taylor 3501  
G-E Service Shop, 272 E. Indiana Ave., Sterling 26852

### OKLAHOMA

Oklahoma City  
Tulsa

Jay's Elec. Serv. & Supply, 706 N. Broadway, CE 2-7539  
All Elec. Co., 2439 E. Admiral Pl., WE 9-4777

### OREGON

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Medford  
Portland  
Portland  
Salem

Wheeler Elec., 820 1st St., Diamond 5-9846  
Gage Electric, 112 N. Front St., Medford 2-2626  
G-E Service Shop, 2727 N.W. 29th Ave., Capitol 8-7695  
G-E Small Motor Shop, 1752 S.E. Hawthorne, Belmont 6-0374  
Electric Motor Serv., 1005 S. 12th St., Salem 3-3919

### PENNSYLVANIA

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Allentown  
Bradford  
Butler  
Canonsburg  
Chester  
Erie  
Greensburg  
Harrisburg  
Johnstown  
Lancaster  
New Castle  
Philadelphia  
Philadelphia  
Philadelphia  
Pittsburgh  
Pittsburgh  
Reading  
Scranton  
Scranton  
Williamsport  
York  
Kennett Square

G-E Service Shop, 668 E. Highland St., Hamlock 5-9501  
Curio Elec. Co., 825 S. 5th St., Hemlock 2-9923  
Force Electric, Inc., 1814 Union Ave., 2-0978  
Bovald & Co., 181 Main St., 7141  
Dumbough Elec. Repair Shop, 567 W. Brady St., 7-1719  
Kiddler Elec. Co., S. Central Ave., Ext., Box 206, Sherwood 5-4320  
B & H Elec. Motor Serv., 727 W. 7th St., Chester 2-3405  
A. G. Nunamaker Elec., 3036 W. 12th St., 3-7457  
S. E. Hodge Elec. Motor Serv., 522 Tremont Ave., 107  
Edwin L. Heim Co., 671 S. 19th St., Cedar 2-8061  
G-E Service Shop, 841 Oak St., 61-215  
John F. Horling, 446 N. Concord, Box 332, Express 7-9763  
A. Servadio Elec. Mtr. Serv., 634 E. Washington, Oliver 8-8041  
G-E Service Shop, 1040 E. Erie Ave., Cumberland 9-0400  
John F. McCarthy, 719 N. 24th St., Stevenson 7-3811  
Penn. Elec. Motor Co., 3080 Emerald St., Garfield, 6-9920  
G-E Service Shop, 6519 Penn. Ave., Monroeville 1-1203  
Globe Elec. Repair Co., 23rd & Gottschalk St., Sterling 1-2677  
General Engng. Co., Inc., 813 Walnut St., Reading 3-5169  
Scranton Elec. Const. Co., 430 Dix Court., Diamond 2-3152  
Prior & Salada Co., Inc., 231 Pine St., Williamsport 2-4629  
G-E Service Shop, 54 N. Harrison St., York 2-1013  
Robert S. Swanson, 443 S. Walnut St., Kennett Square 1128J

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Providence  
Woonsocket

New England Mach. & Elec. Co., 77 Bayley, Pawtucket 3-2540  
J & H Elec. Co., 200 Richmond St., Gaspée 1-7840  
Elec. Maint. & Eng. Works, 193 Railroad St., Popular 2-3871

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Columbia  
Sumter

Woodward-Stephens Co., Inc., 340 Tribble St., CA 5-2501  
Rotureau Elec. Co., 1901 Main St., AL 4-7827  
Sumter Mach. Co., 103 Brooklyn Ave., Spruce 3-7321

### SOUTH DAKOTA

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Rapid City  
Sioux Falls

Nelson Auto Elec. Co., 309 S. First St., 3500  
Industrial Elec. Supply Co., 2330 W. Main St., FL 2-1017  
Malloy Elec. Mtr. Repair, 307 E. 12th St., 4-5131

### TENNESSEE

Chattanooga  
Columbia  
Jackson  
Johnson City  
Kingsport  
Knoxville  
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Nashville

Chattanooga Arm. Wks., Inc., 1215 Duncan Ave., Madison 9-7361  
Middle Tennessee Arm. Wks., 1202 S. Garden St., EV 8-3672  
Townsend Elec. Co., 128 Gordon St., JA 7-8414  
Jones Elec. Co., Inc., 727 W. Walnut St., 3008  
Kingsport Arm. & Mtr. Wks. Inc., 323 E. Market St., CI 7-7189  
Tenn. Elec. Mtr. Serv., 109 Jennings Ave., 5-3126  
Southern Elec. Co., 1089 Union Ave., 36-5545  
Tri-State Armature & Elec. Wks., 321 E. Butler, BR 37-8414  
Nashville Arm. Wks., 303 8th Ave., South, AL 6-2546

### TEXAS

Abilene  
Amarillo  
Amarillo  
Austin  
Beaumont  
Borger

Brown's Elec. Serv., 910 Oak St., OR 2-3998  
C & S Elec. Co., 1717 E. 10th St., 3-4898  
G.E. Jones Elec. Co., 212 N. Polk St., DR 2-5505  
Hamilton Elec. Co., 1306 Red River St., GR 8-3848  
ABC Armature Wks., 1347 Park St., 4-6241  
G.E. Jones Elec. Co., 403 E. 10th St., BR 3-2961

### TEXAS (Cont'd)

Corpus Christi  
Corpus Christi  
Dallas  
Dallas  
El Paso  
Ft. Worth  
Galveston  
Houston  
Houston  
Lubbock  
Marshall  
McAllen  
Midland  
Port Arthur  
San Angelo  
San Antonio  
Sherman  
Texarkana  
Tyler  
Victoria  
Waco  
Wichita Falls

Bradley's Motor & Arm. Wks., 1920 N. Port Ave., TU 2-8891  
G-E Service Shop, 115 Busse St., TU 4-3302  
G-E Service Shop, 3202 Manor Way, FL 2-7587  
W. M. Smith Elec. Co., 3200 Grand Ave., HA 8-4606  
Elect. Motor Co., 1517 Wyoming St., 2-1712  
Central Elec. Co., 712 N. Main St., ED 5-1368  
Elect. Supply of Galveston, Inc., 2310 Mechanic St., 5-6351  
G-E Service Shop, 5534 Harvey Wilson Dr., WA 3-2551  
Oliver Arma. Wks., 612 Live Oak St., CA 2-9271  
W. M. Smith Elec. Co., 1911 Clovis Rd., PO 5-6348  
Rudd Motor Co., 109 E. Burleson, WE 5-5282  
McAllen Arma. Wks., 617 Beaumont Ave., MU 6-6651  
G-E Service Shop, 3404 Bankhead Highway, MU 2-7072  
Johnston Hughes Armature Wks., 2619 Seventh, YU 3-6207  
Central Elec. Co., 218 N. Chadbourne St., 6524  
San Antonio Arm. Works, 637 N. Flores St., CA 7-8802  
Duke Elec. Co., 524 W. Houston, 2918  
Thompson Elec. Co., 1307 W. 7th St., 3-9961  
J & J Arm. Wks., 403 E. Erwin St., 4-8418  
Elect. Mach. & Supply Co., 1509 Port Lavaca Dr., HI 3-7604  
Caldwell Elec. Co., 1728 Franklin St., 3-7151  
Elect. Motor, Div. United Elec., 500 Galveston St., 7-8333

### UTAH

Ogden  
Richfield  
Salt Lake City  
Salt Lake City

Elect. Motors, Inc., 249 Washington Blvd., 6463  
Utah Elect. Supply Co., 50 West First North, 189  
G-E Service Shop, 301 S. 7th West, EM 4-1891  
Utah Elect. & Motor Co., 630 S. State St., DA 8-8151

### VERMONT

Burlington  
White River Junction

Metevier Motor Serv., 226 North St., University 4-4365  
T & L Elec. Co., Inc., Mountain Rd., 1018

### VIRGINIA

Arlington  
Damville  
Lynchburg  
Norfolk  
Richmond  
Richmond  
Roanoke  
Staunton  
Hampton

Garrett Arma. Co., 4808 Lee Highway, Jackson 7-1813  
Parrish & Johnson Elec. Co., Inc., Riverside Dr. & Mt. Cross Rd., Swift 2-4711  
Elect. Serv. Co., 700 5th St., 2-2395  
Caddell Elec. Co., 245 Court St., Madison 2-5654  
Electr. Equip. Co., Inc., 9-13 W. Main St., Richmond 7-2647  
G-E Service Shop, 1403 Ingram Ave., Richmond 2-6733  
Biles Arma. Winding, 521 Rorer Ave., S. W., 3-6401  
Staunton Elec. Co., 26 S. Jefferson St., 5-4161  
Peninsula Elec. Motor Serv., Inc., 1428 Kecoughton Rd., Newport News 4-2955

### WASHINGTON

Bellingham  
Ephrata  
Everett  
Pasco  
Seattle  
Spokane  
Tacoma  
Vancouver  
Walla Walla  
Wenatchee

Mac & Mac Elect., 1310 Indian St., Bellingham 853  
Gardner Elect., 1007 B. S. W., Ephrata 4-2271  
Indust. Elect. Supply, 2701 Hewitt Ave., Bayview 3129  
Tri-Co. Elect., 1716 West 4th Ave., LI 7-3532  
G-E Service Shop, 3244 1st Ave. S., Seneca 8300  
G-E Service Shop, S. 155 Sherman, Riverside 7-1055  
Gustafson-Newmish, 1956 Jefferson Ave., Market 7-4420  
Handy Elect., 1318 Main St., Oxford 4-2171  
Harold Elect., 211 E. Alder St., Walla Walla 300  
Indust. Elect. Supply, 301 N. Wenatchee, Wenatchee 3-4756

### WEST VIRGINIA

Bluefield  
Charleston  
Huntington  
Morgantown  
Parkersburg  
Wheeling

Hart Elect. Shop, Rt. 52 South-P. O. Box 3237, DA 7-7407  
G-E Service Shop, 306 McCorkle Ave., Dickens 6-9428  
Lawter Elect. Motor Co., 314 Twentieth St., 3-2134  
Golis Elect. & Mach. Co., DuPont Rd., 4668  
McHenry Elec. Co., 1604 Lynn St., P. O. Box 589, GA 2-0931  
Warwood Arma. Repair Co., 7th & Hazlett Ave., Warwood 388

### WISCONSIN

Appleton  
Green Bay  
LaCrosse  
Madison  
Milwaukee  
Milwaukee  
Oshkosh  
Racine  
Sheboygan  
Wausau

G-E Service Shop, P. O. Box 83, RE 4-6586  
Beemster Elect. Co., 133 N. Broadway St., Hemlock 7-3238  
Lackore Elec. Mtr. Rep., Inc., 111 Main St., 2-7635  
Elec. Mtr. Serv. Co., 323 E. Wilson St., AL 6-6724  
G-E Service Shop, 940 W. St. Paul Ave., Broadway 1-5000  
Heating Parts Exch., Inc., 1351 W. North Ave., LOcust 2-3990  
W. W. Elect. Sales & Serv., 819 15 St., Stanley 3179  
Lake Shore Elect. Co., 342 State St., ME 4-5889  
Hamold & LaFarge, Inc., 1128 S. 11th St., GL 7-5544  
Snapp Elect. Wks., 416 Grand Ave., 2-1031

### WYOMING

Casper  
Cheyenne

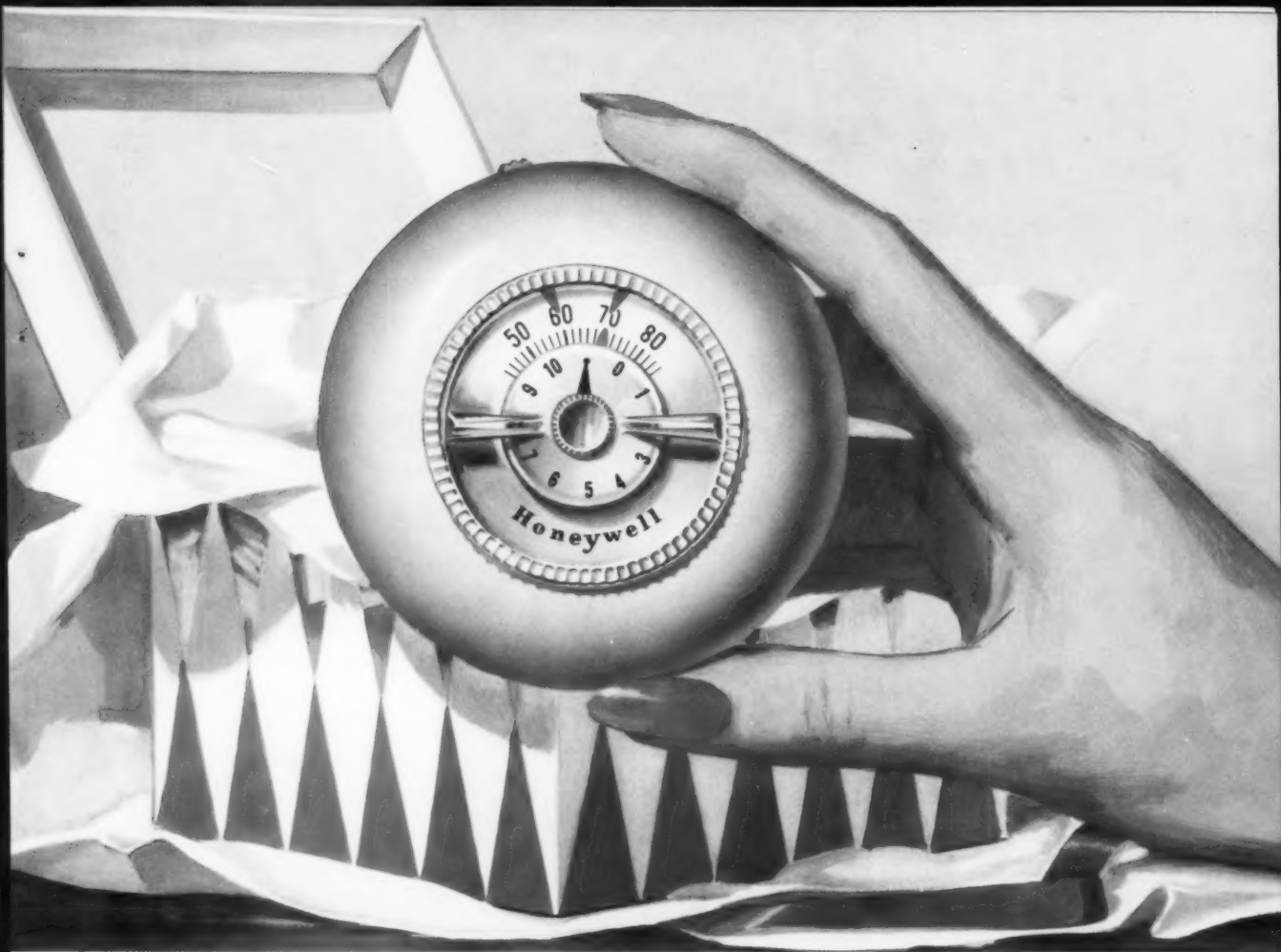
Elect. Serv., Inc., 1120 East "B" St., 2-7366  
Elect. Motor Co., 1019 East Lincolnway, 3-3677

### HAWAII

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W. A. Ramsey Co. (American Factors Ltd.), Box 1721, 1020 Auaui St., 5-5941

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## New Day-Nite Round

*with automatic morning pickup!*

New features, new beauty give Day-Nite Round new homeowner appeal, make it easier to sell.

Show your customers the smart way to new comfort, convenience, economy! Set at bedtime when heat is turned back, new Day-Nite Round automatically turns up heat to normal morning comfort level before household awakes. Saves fuel, too; greater efficiency and greater sensitivity. The outer ring comes off for easy painting to match or blend with any wall—an unusual decorator feature.



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Outer ring comes off for decorating  
It's easy to paint

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*First in Controls*



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**Honeywell Thermostats**

The new Honeywell T832 Day-Nite Round, shown above, is the kind of thermostat heating men like to sell because it's low in cost and loaded with sales features. At bedtime, for example, homeowners set it for cool sleeping comfort. Then, before they awake, it turns up the heat so the house is toasty warm when they get up. It's a real fuel saver for working couples, too. They set temperature low when leaving the house and the T832 automatically turns up the heat before they return home in the evening. And everyone loves the famous Round decorator feature: outer ring snaps off for painting.

*Remember . . . it's good business to offer the complete line of Honeywell thermostats!*

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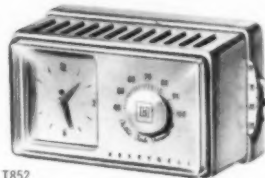
T7012

*Golden Circle*, for heating, cooling. Works with outdoor thermostat for Electronic Moduflow® comfort.



T87

*Year-Round Thermostat* controls heating and cooling; choice of eight different subbases.



T852

*Electric Clock Thermostat\** turns heating or cooling up or down automatically—at any desired times.



T86

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## DESIGNS A **FULL** CAPACITY 2 H.P. COMPRESSOR

## that has real economy

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Model B21T18 — 2 HP — 23,400 BTU  
Model B74T16 — 2 HP — 19,500 BTU

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FOR ROOM AIR CONDITIONERS, AND ALL TYPES  
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Models  
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**REPUBLIC CONTINUOUS GALVANIZED** sheets are ideally suited to applications calling for corrosion protection at low initial cost. Uniform, tight zinc coating won't crack, flake or peel under any forming operation permitted by the base metal.

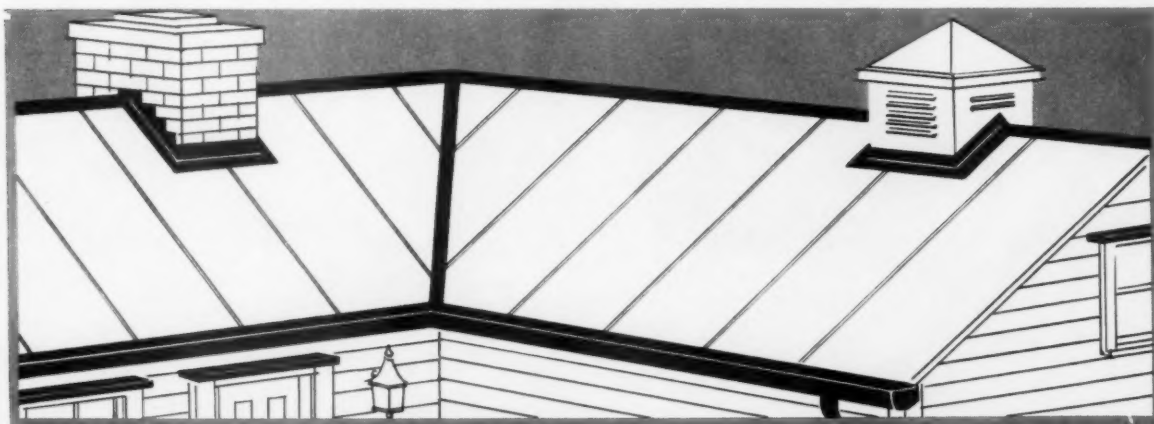
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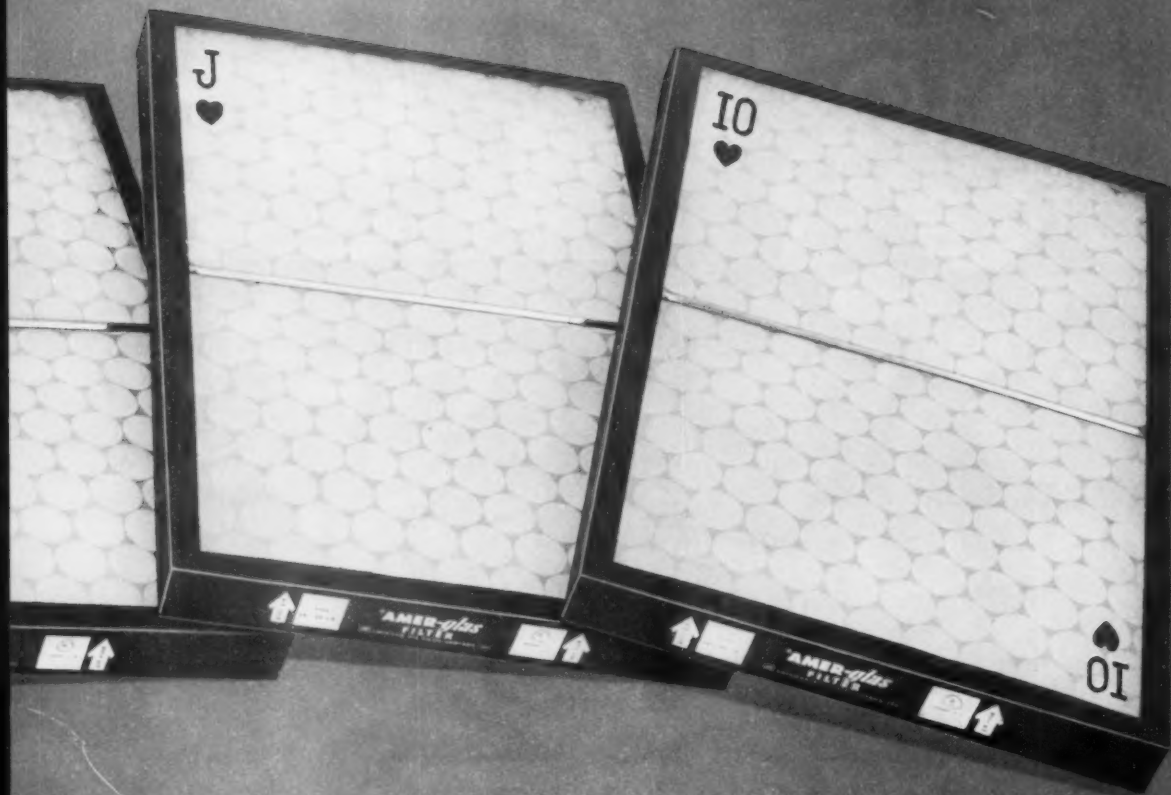
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**Milcor Steel Roof Deck makes every job easier, quicker, more profitable**

This roof deck job was laid by 5 men, including foreman, in only 5 hours! But it's not unusual. Many contractors get buildings under cover faster — and keep job costs down — by using Milcor Steel Roof Deck.

Its 24-inch width means less welding. Lengths up to 28'6" cover faster. Die-set

ends make fitting easy and rapid.  $\frac{3}{4}$ "-wide ribs enable you to weld from the top.

That's not all. Only Milcor Steel Roof Deck is Bonderized and baked-enameled for two-way prime-coat protection against on-the-job surface damage. Yet, Milcor Deck costs no more!

Get the full story. Write for Catalog 240.

**MILCOR**® Steel Roof Deck

Milcor Steel Roof Deck  
Style A. Also available in  
two other styles.

**INLAND STEEL PRODUCTS COMPANY,** Dept. U, 4023 West Burnham Street, Milwaukee 4, Wisconsin

ATLANTA•BALTIMORE•BUFFALO•CHICAGO•CINCINNATI•CLEVELAND•DALLAS•DENVER•DETROIT •KANSAS CITY•LOS ANGELES•MILWAUKEE•MINNEAPOLIS•NEW ORLEANS•NEW YORK•ST. LOUIS.



### Business Expects Good 4th Quarter

NEW YORK CITY — A recent survey of businessmen shows that the majority look for higher sales than a year ago for the fourth quarter of 1957. Most executives expected price rises to account for part of the increase rather than expansion in unit volume.

Net profits during the fourth quarter were expected to equal or exceed the comparable 1956 level by 89 percent of those interviewed.

High selling prices will be most likely sustained during the last quarter, the survey revealed. Wholesalers surveyed were more inclined to look for price increases than manufacturers or retailers.

A large majority, 85 percent, thought they would need at least as many workers on their payrolls as a year ago. Manufacturers of durable goods showed the greatest interest in hiring additional employees.

### Apprentice Training Gets Support from Industry

WASHINGTON, D.C. — Industry has become increasingly aware of its responsibility for the development of the nation's skilled work force, W. C. Christensen, director of the U.S. Department of Labor's bureau of apprenticeship and training, noted in a recent speech.

It is not only aware of its responsibility, but it is doing something about it, he added. Approximately 190,000 registered apprentices are currently in training throughout the country, an increase of 15,000 over a year ago.

"Indicative of the larger investment in training being made by industry is the increasing number of joint apprenticeship committees having funds with which to operate their programs. The number of such committees has increased four-fold during the last year and a half," he said.

## Successful Dealers to Tell All At NWAHACA Convention

CHICAGO — The 44th annual convention of the National Warm Air Heating and Air Conditioning Association will be loaded with success stories of dealers who promoted modernization sales through punching doorbells, telephone calls and advertising. Others will tell how they made money serving the new house market. The meeting will be held here on Thursday and Friday, Nov. 21-22, at the Morrison Hotel.

Believing that industry conditions and problems demand specific solutions, the convention committee has eliminated all generalized topics and concentrated on presenting a program of "specifics." Almost every presentation will be a case history in which the speaker will present a problem and tell what was done to solve it.

Some typical topics to be included in the convention program are:

"The Heating and Air Conditioning Business Is a Profitable Business" — This presentation will point out what it takes for profitable operation of a heating and cooling business in today's market.

"Prospecting Pays Off" — A case history of a dealer who has found that doorbell ringing and other forms of prospecting can produce profit-making sales.

### Issue Southern California Heating-Cooling Guide

LOS ANGELES — A new edition of the Southern California Warm Air Heating and Air Conditioning Guide has been published. It contains the latest codes, permit data and contractors' license fees for 133 incorporated cities and 10 unincorporated county areas in the region from Santa Barbara south. This is the third volume of the Guide. For information, write to Institute News, 1822 S. Burlington, Los Angeles 6.

"The Terre Haute Story" — The case history of a dealer who increased his sales 70 percent and profits 40 percent, in two years, with a well-planned, continuous advertising program.

"Selling a Quality System" — A successful dealer will describe how he sells top-quality installations against cut-price, low quality competition.

"Profit Through Better Buying Habits" — A dealer-contractor will tell how he keeps his procurement costs at a minimum through well-planned buying.

Other subjects to be covered include: Group Advertising, Accessory Sales for Increased Profits, Standardizing for Profit, Engineering for Profit, How to Use Time Payment Selling, and The Features of Selling Service Profitably.

Industry members planning to attend the convention are urged to make reservations promptly at Hotel Morrison, Madison and Clark Streets, Chicago 2.

### ASHAE Names Jennings As Director of Research

NEW YORK CITY — Professor Burgess H. Jennings has been named director of research for the American Society of Heating and Air-Conditioning Engineers. He will direct the Society's research program at its Cleveland laboratory and at cooperating institutions.

Since 1942 Professor Jennings has been chairman of the Department of Mechanical Engineering, The Technological Institute, Northwestern University, Evanston, Ill. He has resigned this appointment to accept the new position. He is a past president of the American Society of Refrigerating Engineers.

(More news on page 28)

## NHAW to Explore Costs and Credit, Promotion, Profit

COLUMBUS, OHIO — Workshop panels and dramatic skits, the formula which proved so popular last year, will be featured at the 11th annual fall convention of the National Heating and Airconditioning Wholesalers association in Chicago, Nov. 18-20. The meeting will be held at the Morrison Hotel.

The first workshop panel will be on the subject "Know All Your Costs of Doing Business." This panel was so well received at the last convention that it is being repeated.

A second workshop panel will discuss Credits, Collections, and Finance. Methods, means, systems, and rating of accounts will be covered, along with financing of accounts receivable and how to meet the rising cost of inventory.

A third workshop panel will be on Budgets for Sales Promotion. It will treat both sales and service departments.

A special presentation will demonstrate how one member sells the large dealer in competition with a direct selling manufacturer.

In addition, the general meetings will hear committee reports, elect officers, and discuss problems of general interest to the members and the industry.

## Six Month Steel Output At Second Highest Total

NEW YORK CITY — Steelmaking furnaces in the United States poured 60,586,000 net tons of ingots and steel for castings during the first half of this year. This was the second highest total for any half year, according to American Iron and Steel Institute.

Only the first six months of 1956, with output totaling 62,607,000 tons of raw steel, outranked the first half of this year.

## May Revive School Aid Bill Next Year

WASHINGTON, D.C. — The issue of federal aid to school construction will probably be revived in next year's session of Congress, even though defeated by the House this year. The National Education Association and certain other groups favoring the legislation have not given up the fight. In fact, NEA has increased its legislative budget and announced plans for an intensive campaign to win support for the measure.

Some members of the House, however, are not optimistic about the chances for future passage of school aid. Representative A. B. Kelly of Pennsylvania, author of the defeated bill, said he believes it is "lost for good." Representative C. M. Bailey of West Virginia, a strong supporter of the bill, said he believes the issue is dead for a long time.

The defeated bill called for a five year, \$1.5 billion program. The money was to be distributed to states half on the basis of school-age population and half on the basis of need.

## ARI Selects F. J. Reed For Engineering Post

WASHINGTON, D.C. — Frederick J. Reed, professor of mechanical engineering at Duke University and chairman of the standards committee of the American Society of Refrigerating Engineers, has been appointed to the newly-created post of chief engineer of the Air-conditioning and Refrigeration Institute.

The move was prompted by ARI's increasing activities in the many technical areas, involving commercial standards, proposed compliance programs, and similar fields, according to George S. Jones, Jr., managing director. Joe H. Berghem, who has been technical secretary of ARI, will remain in that post, heading one area of the enlarged engineering departments' over-all operations, Mr. Jones said.

## Home Cooling Cost Found Low Enough For Most Families

WASHINGTON, D.C. — Most American families will find operating costs of residential air conditioning well within their financial reach, according to recent studies cited by George S. Jones, Jr., managing director of the Air-Conditioning and Refrigeration Institute.

"These studies also indicate," he said, "that the industry must advise its customers in the matter of insulation, proper orientation of the home, the importance of shade, and other factors that contribute to the efficient operation of our product and pare operating costs to a minimum."

The studies mentioned by Mr. Jones are being conducted by Owens-Corning Fiberglas in all parts of the country. The research is about half completed. The preliminary figures show an average year 'round cost for heating and cooling of \$10.64 monthly. The homes taking part in the study were all specially designed for optimum efficiency of heating and cooling equipment.

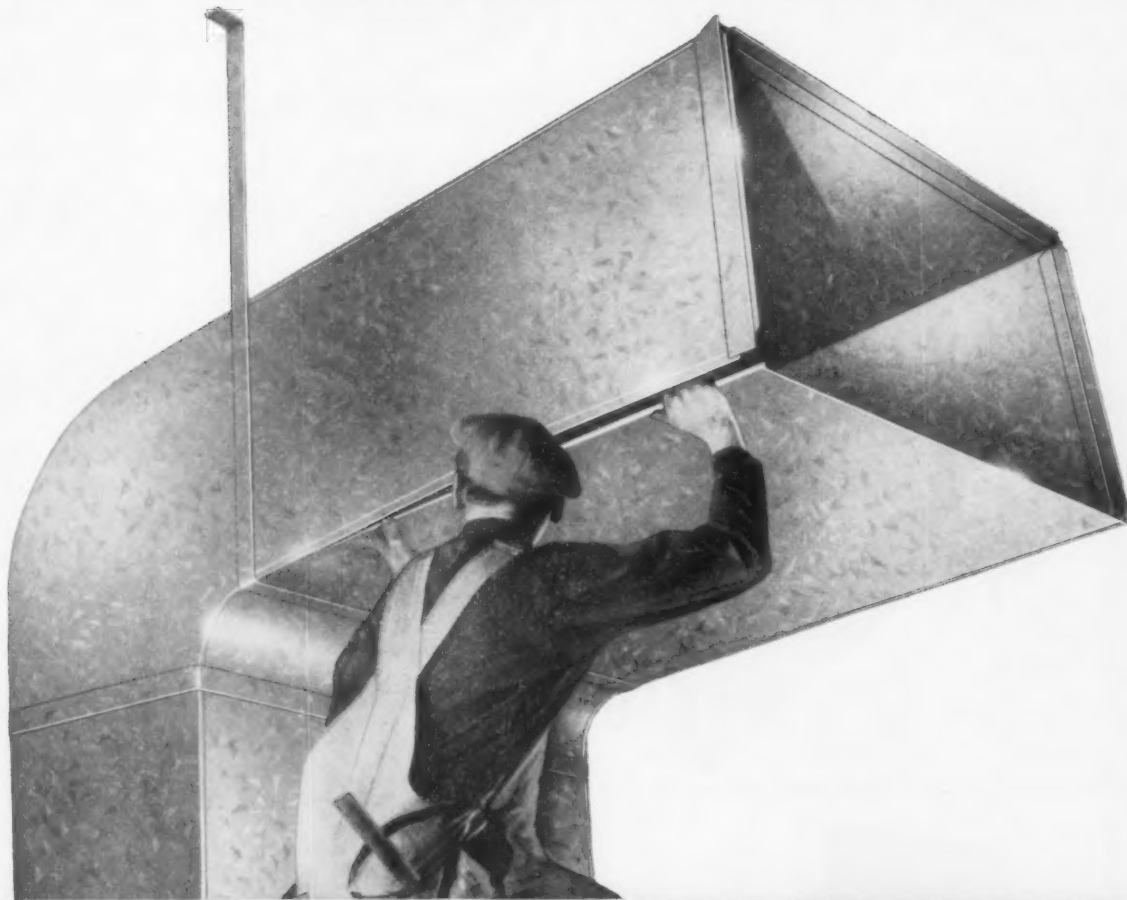
Because of the importance of the design factor in achieving low cost operation, Mr. Jones urged consultation between cooling dealers and home builders and owners to encourage such practices as the maximum use of insulation, adequate attic ventilation, outside shading of sunny windows, and if possible, orientation so that large glass areas face north and south.

## Announce New Dates for Michigan Short Course

EAST LANSING, MICH. — The previously announced dates for the short course to be held here at Michigan State University have been changed to March 31 through April 3. The course formerly was March 25-28.

(More news on page 32)

# Good, tight joints easy to make with USS Galvanized Steel Sheets



THE uniform ductility, flatness and workability of USS Galvanized Steel Sheets pay off in ductwork jobs like the one illustrated here. They handle easily, form readily and go together smoothly to make neat, durable installations.

USS Galvanized Steel Sheets receive a uniform coating of zinc. They can be cut, sheared,

stamped, lock seamed, soldered, rolled or bent without danger of cracking, chipping or flaking. In addition, the bright, galvanized finish adds to the attractive appearance of the job.

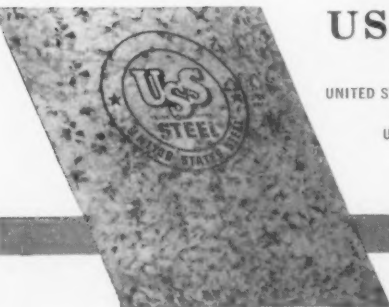
For information on USS Galvanized Steel Sheets, get in touch with the nearest Sales Office of United States Steel.

## USS GALVANIZED STEEL SHEETS

UNITED STATES STEEL CORPORATION, PITTSBURGH • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO  
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.  
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UNITED STATES STEEL EXPORT COMPANY NEW YORK



UNITED STATES STEEL



# MORE AND MORE CONTRACTORS ARE INSTALLING MAID-O'-MIST *Automatic* Convector HUMIDIFIERS

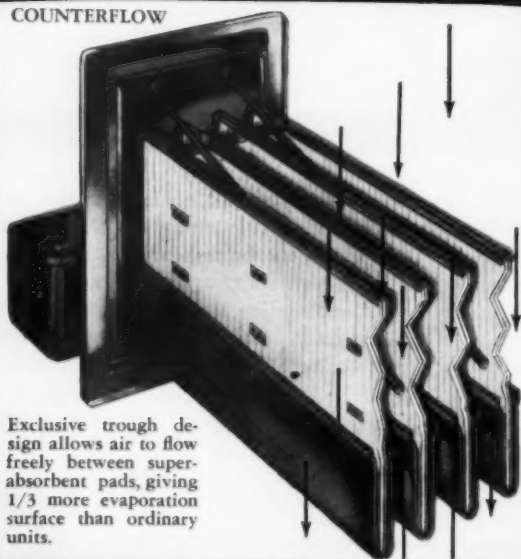
Saves *half* the time to INSTALL! Gives a *third* MORE EVAPORATION AREA!  
Has *two-thirds* LESS AIR RESTRICTION IN THE PLENUM!

CONVENTIONAL



Patented UNBREAK-ABLE pads *can't* drip . . . thanks to built-in NON-DRIP troughs. Only Maid-O'-Mist has this advantage.

COUNTERFLOW



Exclusive trough design allows air to flow freely between super-absorbent pads, giving 1/3 more evaporation surface than ordinary units.

## GIVES MOST FOR LEAST

While a Maid-O'-Mist humidifier gives lasting satisfaction to the customer, it costs very little. Actually, it gives more humidity per dollar cost than any humidifier on the market.

## Fits Both Conventional and Counter Flow Warm Air Furnaces

The only standard unit that does! Perfect for small plenums, easy to install. No flat bottom pan to block flow of air.  $\frac{3}{8}$ " individual troughs, spaced an inch apart to allow free airflow between evaporator pads, give a THIRD MORE EVAPORATING SURFACE.

## Something NEW! RENEWAL KIT

with evaporator pads and valve stem. Easy for home-owner to install himself. Eliminate service calls. Ask your jobber or write us for details.

WRITE FOR FREE CATALOG TODAY.

60% LESS AIR  
RESTRICTION  
IN PLENUM

30% MORE  
EVAPORATION  
AREA

50% LESS  
INSTALLATION  
TIME

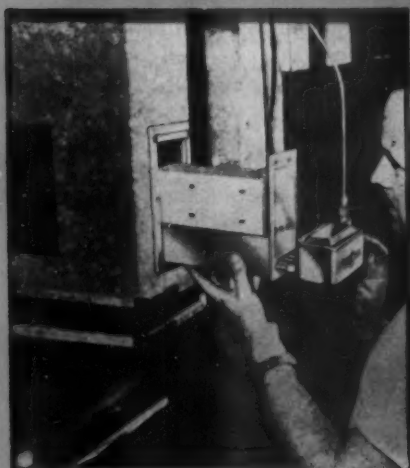
AUTOMATIC HUMIDIFIERS . . . . . WATERLINE CONTROLS  
AUTO VENTS . . . HEATING AND AIR CONDITIONING SPECIALTIES

# MAID-O'-MIST, Inc.

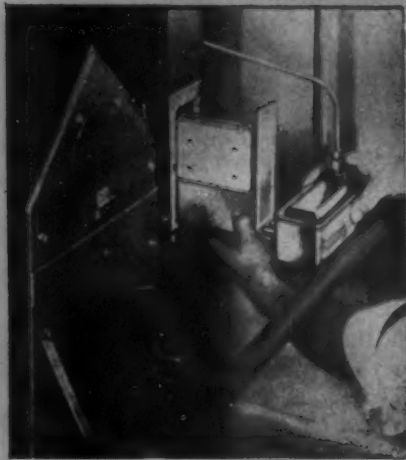
3217 NORTH PULASKI ROAD · CHICAGO 41, ILLINOIS



The only standard unit that fits both conventional and counter flow systems



**FOR CONVENTIONAL** warm air furnaces cut opening in plenum and make water connections. 9 sizes available with evaporation capacities of 1 to 10 gals. per day.



**FOR COUNTER FLOW**, because of its narrow trough design, you can install on either side of furnace having 3" minimum air passage.



# For dependable water level control use MAID-O'-MIST FLOAT CONTROL VALVES

Thrifty answer to limited space in  
**HUMIDIFIERS**  
**PAN FILLERS**  
**AIR CONDITIONERS**  
**AIR WASHERS**



**No. 51**

## FAMOUS No. 50 SERIES

Compact, precision-designed, you can count on MAID-O'-MIST float control valves to effectively meet your water-level control requirements. An acknowledged leader in its advanced engineering, they give faithful performance.

### No. 51 FLOAT CONTROL VALVE

Only 5 3/4" long overall, including copper float 2 1/8" in diameter x 1 1/4" deep. Stem and body made of brass . . . valve seat of hard nylon, protected with fine metal screen. Can be fitted in 9/16" hole or screwed directly into tapped opening. Up to 85 lbs. pressure; 1/2 gal. per minute at 50 lb. pressure.

### No. 52

Similar to No. 51, but designed for 1 gal. per minute capacity at 50 lbs. pressure, with pressures to 125 lbs. Overall length, 8", with 1 1/2" x 4 1/4" long float.



**No. 52**

### No. 59

Valve is vertically mounted with special bracket to mount on reservoir or pan well above water line. Just 5" long.



**No. 59**

### No. 6917

#### Series Diaphragm Valves

Heavy duty, large capacity water level controls, rugged and strong. Capacities 1 1/4 gal. to 6 gal. per minute.



**No. 69**

Get full information from your jobber or write for catalog today!



# MAID-O'-MIST, Inc.

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## FHA Mortgage Changes Are Greeted By Mixed Reaction

WASHINGTON, D.C. — The higher interest rates and lower down payments put into effect on mortgages insured by the Federal Housing Administration brought a mixed reaction from industry officials. Some were optimistic that the government action would provide the looked for boost to home building; others felt the action would have little effect.

The FHA increased the maximum permissible interest rate on its insured home mortgage loans to 5¼ percent. It cut down payments on its insured mortgages to 3 percent on the first \$10,000, 15 percent on the next \$6000 and 30 percent on amounts over \$16,000. They had previously been 5 percent on the first \$9000 and 25 percent on amounts over that.

The government action was taken with the hope that the lower down payment will persuade more people that they can afford to buy houses, and the slightly higher interest rates will persuade lenders to offer more funds for mortgage loans.

The FHA also placed controls on discounting of mortgages. Discounting means that a mortgage is sold at less than its face value, which in effect increases the amount of interest. The new discount limits range by regions up to 2½ percent.

## California Leads in Building for First Half '57

NEW YORK CITY — California was by far the leading state in residential construction contracts in the first half of 1957, a report from F. W. Dodge Corp. reveals. New York ranked second and Illinois third. The top three states together accounted for nearly one-third of the nation's total construction contracts. Illinois had the sharpest gain over the last year of any of the three states.

The National Association of Home Builders declared that the government action will "erase the pessimism generally prevalent throughout the industry and replace it with an optimistic outlook for the future." The NAHB, however, did not see much chance for improvement in 1957 because it is late in the season. It looked for a better home building picture in 1958.

Bankers interviewed across the country did not see much hope for an increase in mortgage funds. Said Morton L. Bodfish, chairman and president of the First Federal Savings and Loan of Chicago, "There is an active demand for money at 5½ and 6 percent interest with good security outside of the housing market. We just don't see lenders rushing to FHA."

Martin H. Braun, president of the Chicago Metropolitan Home Builders Assn., said, "The lower FHA down payments will help only on houses costing less than \$20,000. We expect an immediate increase in demand for these lower priced homes. Buyers will act now because labor, land and financing costs have already risen and will soon force builders to increase prices."

Another side of the picture was presented by a Philadelphia builder, who saw the decline in new home building caused by a decrease in demand, rather than lack of financing.

However, Arthur E. Young, FHA director for Massachusetts, reported a substantial increase in inquiries since the new regulations were put into effect. He looks for increased building.

Meanwhile, applications for mortgages under the Veterans Administration program hit a new low in July. The ceiling on VA mortgages was left at 4½ percent by Congress. NAHB called this "another nail in the coffin of the GI program."

## National PR Drive Launched by OHI

NEW YORK CITY — A national public relations program has been launched by the distribution division of the Oil-Heat Institute. Under the direction of a special advisory committee, the program will include all types of media, such as magazines, newspapers, radio, TV, and special literature. A special Oil-Heat Industry National News Bureau is being set up and a public relations counsel has been retained.

Everett Elliott of the Oil-Heat Institute of New England is chairman of the special committee working on the program. Other members are E. L. Fentress of the Tidewater Oil-Heat Association and Tim Loizeaux, Sr., of the Union County, N.J., Oil Heat Association.

The program is being presented to the Oil-Heat Institute Board this month with the hope that other divisions of OHI will join in the program. The new public relations activity will complement the efforts of Oil Heating Market Report's regional advertising and promotional programs, although there is no connection between the two activities.

## Fan, Blower Shipments Off Slightly Last Year

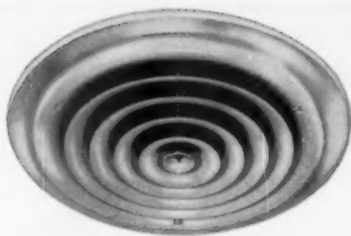
WASHINGTON, D.C. — The value of manufacturers' shipments of fans, blowers and accessory equipment was down in 1956 by around one million dollars over the year previous. The total value of shipments in 1956 was \$230,487,000 as compared with \$231,499,000 for 1955.

Shipments of centrifugal fans and blowers were down from \$106,880,000 to \$102,094,000. The drop in axial fans was from \$16,248,000 to \$14,792,000. These decreases were offset in part by an increase in propeller fan shipments from \$92,432,000 to \$96,736,000.

(More news on page 36)

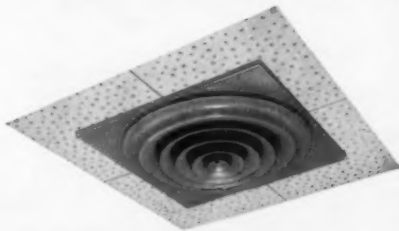
**No. 16 CEILING  
DIFFUSAIRE**

Step-down type. Provides more C.F.M. than any similar diffuser at same pressure loss. No. 15 Flush type.



**No. 18 ADAPTER  
SQUARE**

for Nos. 15 and 16 DIFFUSAIRES solves the "round or square" problem perfectly.



**Nos. 462 and 464  
BASEBOARD  
DIFFUSAIRES**

2' and 4' lengths used individually or in multiples. FLEXO-FLANGE simplifies installation. Balanced at face.



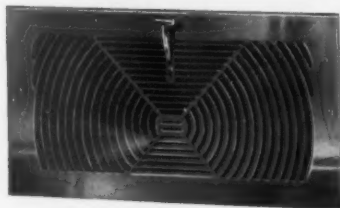
**No. 411 FLOOR  
DIFFUSAIRE  
(PERIMETER)**

has opposed louvers for perfect air pattern. Positive balancing adjustment.



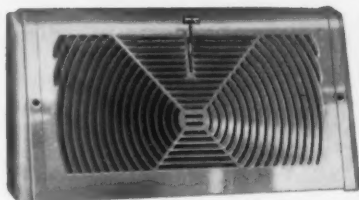
**No. 401 SIDEWALL  
DIFFUSAIRE  
(PERIMETER)**

blankets wall of average room. Positive volume control valve.



**No. 405  
OUT-OF-WALL  
BASEBOARD  
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Furnished with back panel, no stackhead required.



# Insist on **H & C** **DIFFUSAIRES**

**To be sure of having  
the best diffuser for each  
and every installation!!!**

There are two mighty good reasons for standardizing on the H&C line of diffusers. First: Each member of this line is the very "tops" in its classification . . . from any angle from which you choose to judge it . . . appearance . . . efficient air distribution . . . ease of installation . . . ease of balancing the system . . . effectiveness in cooling as well as heating. Second: The H&C line of DIFFUSAIRES is really complete . . . supplying exactly the diffuser best suited to each and every type of installation. Stick tight to H&C DIFFUSAIRES, and you will always be right. See them at your H&C Jobbers and by all means ask for a copy of our new Catalog "B" if you do not already have your copy.



## **HART & COOLEY MANUFACTURING CO.**

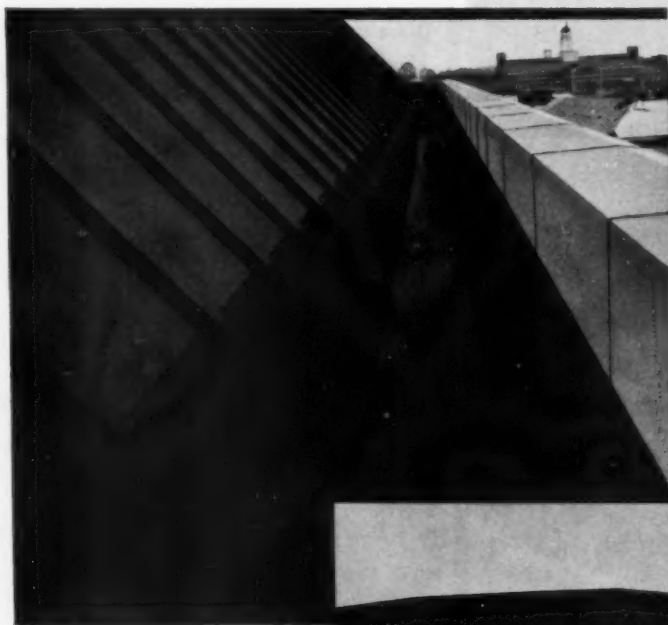
500 EAST EIGHTH ST., HOLLAND, MICHIGAN

IN CANADA:

HART & COOLEY MANUFACTURING CO., FORT ERIE, ONTARIO

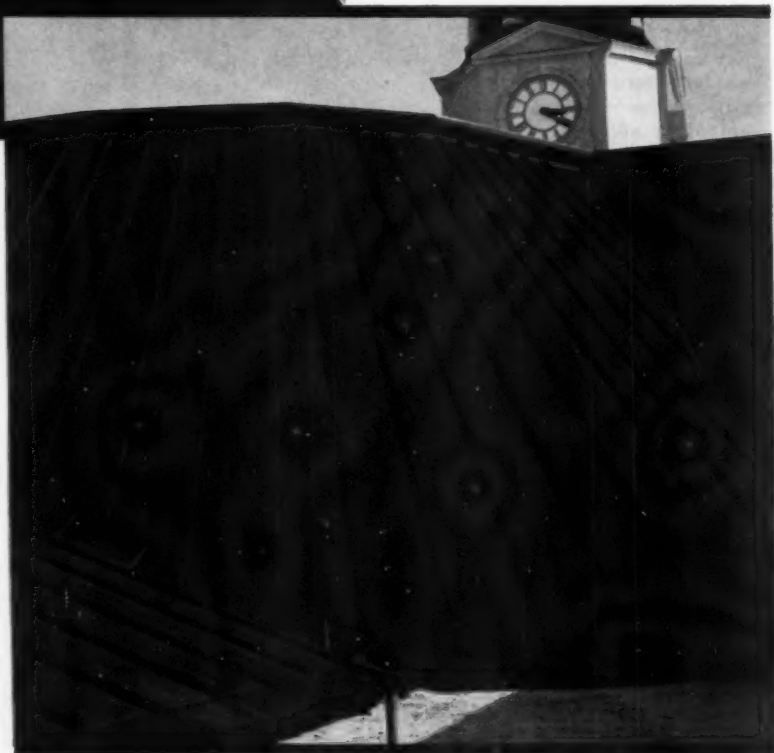


**BUILT TO LAST**—Here you see section of batten seam roof with parapet flashing and gutter. Note neat, clean installation that can be made when Revere Copper is installed by skilled workmen according to recommendations made in Revere's 110-page Brochure, "COPPER AND COMMON SENSE." Shown in background is one of the expansion joints which is used to insure gutter against buckling and cracking when copper expands and contracts with temperature changes.



**CLOSE-UP OF SECTION** of batten seam roof on Chapel Building which was installed according to recommendations made in Revere's Brochure, "COPPER AND COMMON SENSE," as specified by the architectural firm of LARSON AND LARSON, Winston-Salem, N. C.

J. FREDRICK LARSON who has earned a splendid reputation for the fine work he also has done at Colby, Bucknell, Lehigh and other colleges says that, to his way of thinking, the "COPPER AND COMMON SENSE" Brochure is a "must" for every architect and contractor.





**"The 400,000 lbs. of sheet copper used on the buildings of Wake Forest College emphasize the matchless characteristics of this ageless metal in building construction."**

*Says FRANK COX, President  
Cox Roofing Company, Winston-Salem, North Carolina*



"One of the beauties of copper," continued Mr. Cox, "is that it is equally at home in the traditional or the most modernly designed building.

"Of course, the things about copper which are most appreciated by sheet metal contractors like myself are its workability, the ease with which it is soldered and formed, the fact that its enduring qualities have been proved for so many centuries that its wearability is never questioned. It's the kind of material on which you can safely stake your reputation, which is the kind of material I like to work with."

Leading architects, too, are partial to this centuries-tested metal because of its extreme flexibility in design and its ready acceptance among those who pass on specifications. In writing specifications they have found there is no "or equal" for copper.

An added service to architects and sheet metal men is

the marking of all Revere Sheet and Strip Copper with the correct gauge and temper in water-soluble ink.

Ask your distributor to show you. Also ask him about the neat-appearing, weather-tight, easy-to-place Revere-Keystone 2-Piece Cap Flashing\*.

\*Patented. No. 2,641,203 Other Pats. Pend.

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Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

Mills: Rome, N.Y.; Baltimore, Md.;  
Chicago, Clinton and Joliet, Ill.;  
Detroit, Mich.; Los Angeles, River-  
side and Santa Ana, Calif.; New  
Bedford, Mass.; Brooklyn, N.Y.;  
Newport, Ark.; Ft. Calhoun, Neb.  
Sales Offices in Principal Cities,  
Distributors Everywhere.



**CHAPEL AND GYMNASIUM BUILDINGS** at Wake Forest College alone took 125,000 lbs. of Revere Sheet Copper for roof, gutter and flashing work. Copper used on all buildings amounted to some 400,000 lbs., most of which was supplied by Revere.



# Inflation Is Still Major Issue As Congress Seeks Its Cure

WASHINGTON, D.C. — Congressional investigations of inflation and the financial health of the nation were headline news during most of the summer. The debate was obscured by political maneuvering, economic theory, and the cryptic language of statistics.

Behind the investigations was the fact that consumer prices since March 1956 had climbed 5 percent, after a period of remarkable stability from the middle of 1953. In addition, interest rates have been climbing higher, a fact pointed up by the complaints of home builders who are facing a sharp drop in new house starts.

Fingers have been pointing in all directions in the attempt to find the cause of the increased inflation. Among other factors, the blame has been placed upon high government spending, union demands for higher wages, artificially high prices, high interest rates, and excess demand for goods.

William McC. Martin, chairman of the Federal Reserve Board, testified before the Senate finance committee in defense of the Board's policy of holding down credit as a means of defending against inflation.

He explained the current inflation as total demand exceeding total supply. He declared that individuals, businesses and governments have proceeded with their plans for spending, relying heavily upon borrowed money. In so doing, they must bid against each other for the basic factors of land, labor and capital. The inevitable result, he said, has been higher costs and prices.

The unrestricted desire to spend has meant that the demand for borrowed money exceeds savings. This shortage of savings results in higher interest rates. The effect of the higher interest rates should encourage greater savings and at the same time

discourage spending by forcing borrowers to postpone or cut back.

"To maintain artificially low interest rates under these conditions," Mr. Martin said, "without introducing any other force to restrain investment, would be to invite unbridled boom, inflation and an inevitable collapse later."

Mr. Martin declared that efforts by the administration and Congress to hold down federal spending were essential in the fight against inflation.

A growing public awareness of price inflation was shown by the latest study of consumer attitudes by the University of Michigan's Survey Research Center. It found consumers somewhat less ready to buy than in earlier surveys. Consumers were generally optimistic, but a higher percentage than last fall considered prices high and the time less favorable to buy.

## July Housing Starts Rise But Still Below 1956

WASHINGTON, D.C. — Builders began work on new houses at an annual rate of 980,000 units in July, the Labor Department reported. This was up from June's rate of 970,000, but still 10 percent below the same month in 1956.

For the first seven months of the year actual starts totaled 604,500 units, 12 percent below the like period in 1956. The entire drop was in government insured private housing. The demand for conventionally financed units was slightly ahead of last year, the department said.

The higher interest rates and lower down payments allowed on mortgages insured by the Federal Housing Administration did not affect these figures, since they were not effective until August.

## Gas Furnace Shipments Drop 14% in 6 Months

NEW YORK CITY — Shipments of gas-fired furnaces during the first half of 1957 were 14.3 percent below the similar figures for the year previous, according to a report from the Gas Appliance Manufacturers Association. Shipments of conversion burners were off nearly 20 percent for the same period. The months of May and June showed the largest drops in each category.

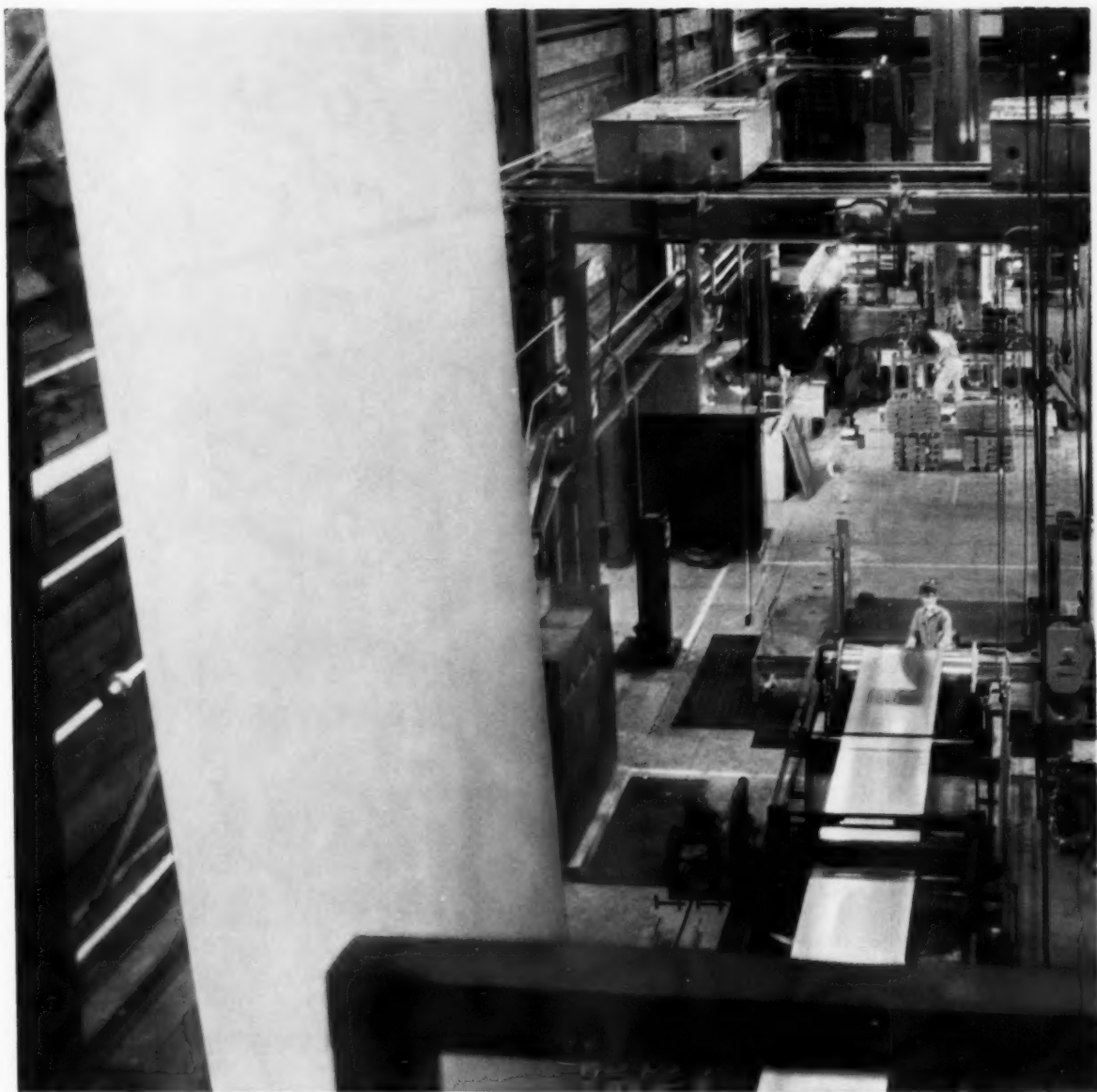
A total of 303,300 gas-fired furnaces were shipped during the first six months as compared with 354,100 in 1956. The shipments of gas conversion burners were down to 50,300 for the period, compared with 62,700 for the year before.

## Texas Laboratory Wins Approval for Fan Testing

DETROIT — The fan testing laboratory operated by the Texas Engineering Experiment Station, an activity of the Texas A & M College System, is the first to be approved by the Air Moving and Conditioning Association as a qualified neutral laboratory for testing centrifugal fans. The use of this laboratory's facilities will be recommended to AMCA members which manufacture such equipment for testing in accordance with the association's standard test code and laboratory standards.

## OHI Service Schools Start In New England Cities

BOSTON — A series of Oil Heat Service Schools was started the week of Sept. 9 in five New England cities. The schools are sponsored by the Oil Heat Institute of New England. Each school meets once a week for ten weeks. Courses are being conducted in Salem, Mass.; Augusta and Portland, Me., and Manchester and Keene, N.H. The same course will be presented in other cities later.



## JALZINC is J&L's superior quality zinc coated steel

JalZinc is produced on this modern Sendzimir continuous galvanizing line. JalZinc has a tight, uniform coating that resists cracking and flaking. The uniform ductility, flatness and a high luster surface finish improve your product appearance.

JalZinc is available in a wide range of gages and widths in both cut lengths and coils. It can be furnished in coating weights from 1.00 oz. to 2.50 oz. per sq. ft., depending on your end product needs.

Get details from your local J&L district office or write to the Jones & Laughlin Steel Corporation, Dept. 518, 3 Gateway Center, Pittsburgh 30, Pa. For out of stock requirements, call your local steel warehouse or sheet metal distributor.




**Jones & Laughlin**  
...a great name in steel

**Standard...best for western living!\***

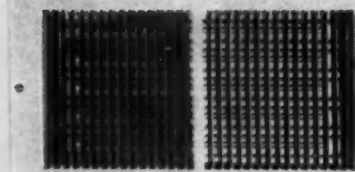


# bring "Lanai" comfort indoors with **STANDARD'S 601**

 You can duplicate the clean, refreshing atmosphere of golden weather, indoors, with Standard Stamping's No. 601 wall or baseboard registers. These registers distribute a precise volume of warm or cool air throughout the conditioned space, without blasts, hot spots, or cold corners. They make interiors as uniformly comfortable as a lanai on the best of days, and they're silent as a night breeze. Features include a new screw stop feature that permits setting the damper for fractional volume control. No. 601 registers are easy to install, attractively styled, available for immediate delivery, and cost no more than ordinary registers!

**Mail the coupon for prices and new FREE catalog of the complete Standard line of registers and grilles!**

**\*And for comfortable living everywhere!**



Available as No. 601 Wall Register; No. 603 Baseboard Register; No. 602 Baseboard Intake; No. 600 Wall Grille

- VERTICAL BARS ADJUSTABLE FOR PERFECT AIR DEFLECTION
- ONE PIECE FRAME
- NEW DESIGN OPERATING MECHANISM INSIDE FRAME
- FAST, EASY, NO-SMOG INSTALLATION
- METALLIC FINISH

## **STANDARD STAMPING & PERFORATING COMPANY**

3137 WEST 49TH PLACE, CHICAGO 32, ILLINOIS

Gentlemen: Please send me your new catalog showing the complete line of Standard Stamping Registers and Grilles.

Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



# You've got the PLACE... We've got the PLAN!



Silent Salesman Display  
Stand Brings You Extra  
Profits Selling



Replacement  
Motors

Just a few square feet of floor space . . . and you're in the motor business . . . right now! This handsome, sturdy display stand will help you add profit without additional work. It's FREE with the first assortment of Century Performance-Rated Motors.

There's a growing demand for replacement motors. Take advantage of this increasing demand for such applications as blowers, pumps, compressors, and other types of equipment! It's easy to supply your customers with precisely the right motors for their needs . . . because you can select from Century's complete range of sizes, types, speeds, frame and torque characteristics.

Your nearby Century Authorized Distributor will be glad to help provide you with fast, efficient service and the necessary stock to meet your needs.

mail this  
coupon today  
for full details

CENTURY ELECTRIC COMPANY, 18th and Pine Sts., St. Louis 3, Mo.

Send me all the facts about Century's Display Stand Motor Selling Plan.

Name.....

Company.....

Address.....

City..... Zone..... State.....

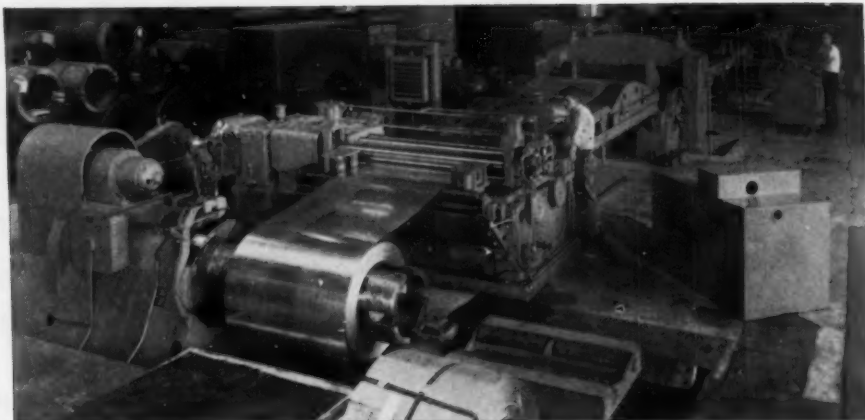
Performance-Rated<sup>®</sup>  
MOTORS  
1/20 to 400 HP



**CENTURY ELECTRIC COMPANY**

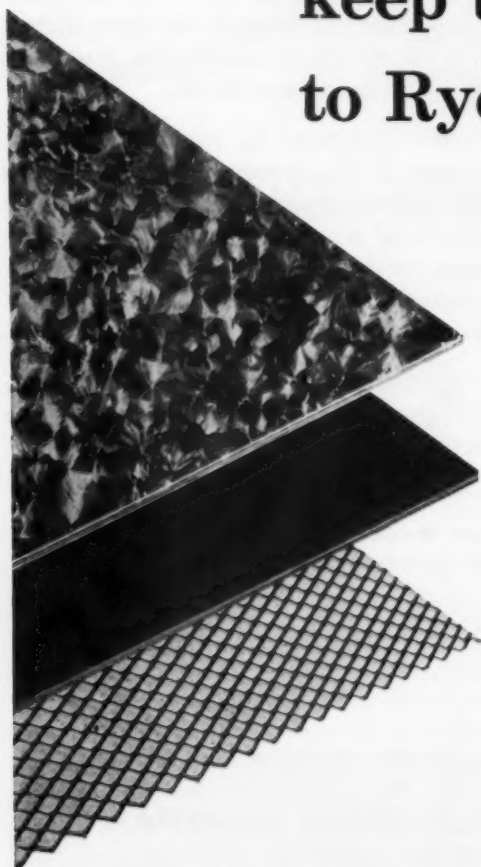
CE-119

18th and Pine Sts. • St. Louis 3, Missouri • Offices and Stock Points In Principal Cities



**SHEET METAL MEN TELL US . . .**

## 3 major reasons keep them coming back to Ryerson:



1. Biggest stocks—nobody comes even close to the size and variety of Ryerson inventories.
2. Unequalled processing facilities—assuring fast, accurate service on any requirement.
3. Dependable, certified quality—at fair prices—whether steel is plentiful or scarce.

## **RYERSON STEEL**

**Principal products in stock:** Sheets of every kind—carbon steel, stainless, expanded metal, etc., bars and band iron, tubing, angles, channels, etc.

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • WALLINGFORD, CONN. • PHILADELPHIA • CHARLOTTE • CINCINNATI  
CLEVELAND • DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

## Use Yardstick for Heating Comfort

ONCE IN A GREAT WHILE something new and different appears on an industry's horizon. In the early 30's the warm air heating industry introduced the furnace-blower combination, and shortly after the end of World War II the perimeter heating system opened the way to better air distribution. The boom in residential cooling followed in a few years. Each of these improvements offered a new approach to year 'round comfort and a new tool for salesmen. Now, one of the strongest sales tools of all is available—a card containing twelve important points to use for rating heating system performance, presented in a special section in the July Artisan.

This sales tool need never fade into disuse because its basic appeal as a yardstick to help the public will exist as long as people ask why they should pay more for one type of heating system than for another. The "Standards" outlined on the card are the most realistic criteria available today and as the warm air heating industry continues to move forward with practical applications of the data uncovered by research and field investigation, some of the specifications shown for a Good system today may become the requirements for the Fair system of the future. Periodic revision of this sales tool, backed by experience and authoritative approval, will maintain this valuable aid as the number one weapon to be used against abbreviated and poorly installed heating systems.

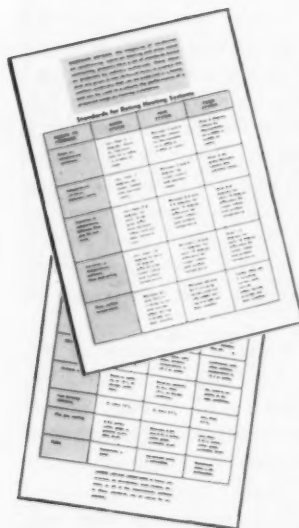
Industry response since July, when American Artisan's campaign was launched to get the information contained in this card into the hands of prospective buyers of heating systems through dealers who sell quality systems, proves the program is already a success. Several orders from dealers for 1000 extra cards were received the first week after the July issue was mailed, and numerous large and small orders continue to come in almost daily. Thousands of these standards cards have thus been put into the hands of the public by dealers cooperating with Artisan in this sales program.

Dealers, wholesalers, manufacturers and association executives have extended their highest praise to American Artisan for making this sales tool available. Several associations conducting aggressive newspaper advertising programs have reproduced the "Standards" in their ads. Dealers report that they have given copies to their local FHA and VA offices, suggesting that these federal agencies consider requiring compliance with the specifications outlined in all cases where these agencies agree to guarantee modernization and new house loans.

Others write that they have shown the "Standards" to local real estate and home builder association officers who have indicated that association members would be informed of the specifications given under the three classifications so they in turn will be able to answer the questions asked by prospective house buyers about the comfort that can be expected from the heating systems. Such action on the part of real estate and builder associations should result in a lessening of the pressure exerted today by so many builders for the lowest priced system. The "Standards" make it possible for the buyer to classify his heating system easily and compare it with the kind of system he was told had been installed.

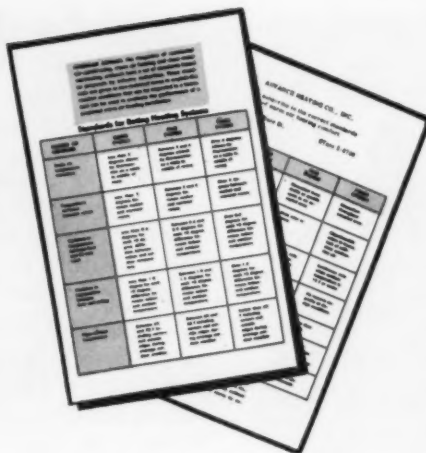
Public awareness of what can be expected as good performance of a heating system will do much to diminish the price pressure the heating dealer has been forced to endure for so long. With a yardstick to measure the performance standards of his purchase, the buyer will no longer attempt to reach a decision where price is the sole measurement he can use.

Local promotion of the heating yardstick through the various advertising media normally used by a dealer will establish him as the man to do business with because he subscribes to the specifications outlined on the "Standards" card.



THIS SALES TOOL, the "Standards" card presented in the July Artisan, has been widely acclaimed by heating dealers as the answer to price competition

# Industry Applauds Heating Standards



Chicago Sunday Tribune  
August 11, 1957  
Part 3—Page C N

## A HOT SUBJECT MAY PAY OFF IN COLD WEATHER

### It's Time to Think of Winter Comfort

Science may some day figure out how to bottle this oversupply of free heat and release it to keep homes warm in winter, but until then, it's a good idea to worry now about keeping comfortable a few months hence.

Heating contractors have plenty of time to devote to new installations and modernization projects, so a good many householders are taking the cue and avoiding the rush.

And home owners and prospective buyers have a new yardstick for judging whether the installation they are offered will live up to its expected comfort level.

#### Points for Contractors

It's in the form of a 12-point chart prepared by the publication American Artisan, by which the heating contractor may commit the proposed installation to "good," "fair," or "poor" performance, based on standards of the National Warm Air Heating and

FOR OVER A MONTH NOW, American Artisan has been receiving letters from dealers, wholesalers and manufacturers all over the country who have passed along to us their opinions and praise for the *Standards for Rating Heating Systems* card and the 16 page special section explaining its use, in the July Artisan.

This card has done more to contribute to upgrading sales than any other single sales tool in the history of our industry — at a time when it is needed most, they say. For the first time it is possible for a prospect to ask direct questions that relate to what he can expect from the system he is considering. The dealer who proposes a quality heating system is in an excellent position to show why his price is higher and how much more comfort can be expected from a system designed to provide the conditions outlined under the *Good* classification listed on the card.

#### Associations Push Idea

To get this information brought to the attention of home owners or prospective buyers of houses and to aid them in determining beforehand the kind of performance they can expect from the heating system they order, several local dealers' associations have purchased advertising space in weekend newspapers to reprint the *standards* set forth in July American Artisan. These associations have identified their members as subscribing to the *standards*.

The Sheet Metal Contractors' Association of Milwaukee purchased two full pages in the August 25 Milwaukee Journal, which has a Sunday circulation of 499,050, to play up the value of buying a heating system based on the performance ratings as outlined in American Artisan. The association has also planned 12 special weekly insertions, in which one of the *standards* will be reproduced and explained in detail each week. These ads will invite the public to write for the complete list of 12 *standards*. Robert S. Schmieder, executive secretary of the association, said, "This should really round out our 1957 campaign in good fashion, and we certainly appreciate the help we are getting from you in this regard."

The executive secretary of the Heating, Air Conditioning and Sheet Metal Alliance of DuPage County (Ill.) ordered for each member of his association a reprint of the 16-page article that explained the use of the *standards* card as a sales tool. He called a meeting of the association and went over each step of the sales approach, presentation, closing and promotion of the *standards* story. He also sent a copy of the rating card to the publisher of the DuPage County Press which serves all cities and towns in the county. This local newspaper editor reproduced for his readers all information appearing under each of the 12 classifications listed on the card, along with an explanation of each

NEWSPAPER EDITORIAL coverage of heating standards promotion can help dealers' campaigns. This article appeared in the Chicago Sunday Tribune after Artisan's special *standards* section was published



**. . . as local and national associations, newspapers, wholesalers, dealers and manufacturers report enthusiasm and begin plans for standards campaigns. Here's what a few have to say**

classification and its importance to the comfort level of a home.

**Newspapers See Value**

The Chicago Tribune, with a Sunday circulation of over 1,303,615, published in its August 11 Home Section a 13 inch editorial review of American Artisan's *Standards for Rating Heating Systems*. The newspaper said, "Home owners and prospective buyers have a new yardstick for judging if the installation offered by the heating dealer will live up to its expected comfort level."

In California, the Institute News, the monthly publication of the Institute of Heating and Air Conditioning Industries of Southern California serving Los Angeles and the entire southern half of California, reproduced the *standards* in their complete form.

The National Association of Home Builders' monthly publication, the Journal of Home Building, has prepared an article based on the heating *standards* and their recommendations. This publication serves the 42,600 builder-members of the association and their suppliers.

**Groundwork Is Laid**

The director of public relations for the National Warm Air Heating and Air Conditioning Association, Randall Nelson, has this to say: "These are times which call for boldness in our industry. There has been much 'wish we could' and 'we ought to' sentiment expressed in the industry over the years but very little 'let's do this'. As a result, the industry has wallowed in a morass of fear, indecision and uncertainty, and has become encumbered with a certain amount of cynicism and despair over whether anything could be done at all. Your program points out a defi-

nite direction and spells it out. I think that you at Artisan are to be commended on taking this step because through your efforts the groundwork can be laid for any industry action which develops."

Wholesalers have ordered up to 500 reprints of the 16-page section along with 1000 cards for distribution to dealers attending their sales courses.

Manufacturers have ordered both the reprints and the cards for mailing by their sales staffs to dealers handling their products because they realize the tremendous advantage the *standards* give the dealer who will explain why he is asking more for the system he proposes.

Dealers have ordered as many as 1000 cards to use as direct mail pieces to be sent in blanket mailings to their market areas. (A sample direct mail letter was published in August Artisan to help dealers present the *standards* card to every family in their sales area.)

This is a quick and brief report on how people in all segments of the industry are using the *standards*. Following are brief quotations from a few of the many letters we've received. These quotations point out what the industry is thinking and saying.

**"an invaluable help"**

"As a sales tool I feel that your *Standards for Rating Heating Systems* will be an invaluable help in showing the customer what a good installation can mean to him in comfort over a poor installation so you can justify a higher price. Certainly we can only give the customer what he is willing to pay for and in the past that has meant that our company has lost hundreds of installations because we were not willing to cut corners and put in inferior in-

stallations. I know that we are in the same boat with many other dealers."

—James B. Kuykendall, Jr., E. P. Nisbet Co., Charlotte, N. C. dealer.

**"something industry needed"**

"I think this is something our industry has needed for a long time. I have called a sales meeting for next week. I will have not only my three salesmen but my two foremen and my service department stress the importance of this project.

"I also want to thank the American Artisan staff for the time and effort spent on this project. I intend to first use this in my newspaper advertising, then follow it up in other ways." —Walt Stevenson, Hoosier Heating and Sheet Metal, Inc., Terre Haute, Ind. dealer.

**"we took steps"**

"We are grateful for the recent article on heating *standards* and the copies of *standards* which you have forwarded to us. We have sales meetings weekly and at the last two meetings we took steps to put the plan into effect." —Allen McKnight, Atlas-Butler, Inc., Columbus, O. dealer.

**"great new tool"**

"We would like to send a copy of this to each of our wholesaler members with a note that here is certainly a 'great new selling tool.'" —W. R. Bull, executive director, National Heating & Airconditioning Wholesalers, Inc.

**"most effective"**

"We have recently used your pamphlet on Heating *standards* at a dealers' meeting and found it most effective." —W. P. Woskoff, manager, sales promotion department,

# Check These Standards for Remember

POINTS TO CONSIDER	GOOD SYSTEM	FAIR SYSTEM	POOR SYSTEM
<b>Room air temperature variations</b>	Less than 2° shown by thermometer on a table in middle of room	Between 2° and 4° (shown by thermometer on a table in middle of room)	Over 4° (shown by thermometer on table in middle of room)
<b>Temperature variation between rooms</b>	Less than 2° between coldest and warmest rooms	Between 2° and 4° between coldest and warmest rooms	Over 4° between coldest and warmest rooms
<b>Variation in temperature between floor and 30-in. level</b>	Less than 0.4° for each 10° difference between indoor and outdoor temperature	Between 0.4° and 0.9° for each 10° difference between indoor and outdoor temperature	Over 0.9° for each 10° difference between indoor and outdoor temperature
<b>Variation in temperature between floor and ceiling</b>	Less than 1.0° for each 10° difference between indoor and outdoor temperature	Between 1.0° and 1.5° for each 10° difference between indoor and outdoor temperature	Over 1.5° for each 10° difference between indoor and outdoor temperature
<b>Floor surface temperature</b>	Between 65° and 70° F including corners and outside edges during average outdoor weather	Between 60° and 65° F including corners and outside edges during average outdoor weather	Colder than 60° F including corners and outside edges during average outdoor weather
<b>Drafts</b>	No noticeable drafts in any occupied area	Discomfort from drafts at specific spots in an occupied area	Discomfort throughout occupied area
<b>Ventilation</b>	No stale odor in house	Stale odor in house	Objectionable odors in house, lack of sufficient combustion air
<b>Blower operation</b>	Continuous when outdoor temperature is 58° F or under	Continuous only when outdoor temperature is 38° F or under	Continuous only when outdoor temperature is 18° F or under
<b>Furnace capacity</b>	Reserve capacity of 10% at design conditions	Reserve capacity of less than 10% at design conditions	No reserve capacity at design conditions
<b>Fuel burning efficiency</b>	At least 72%	At least 67%	Less than 67%
<b>Flue gas venting</b>	0.02 inches water gauge or greater available draft	Between 0.02 and 0.015 inches water gauge available draft	Less than 0.015 inches water gauge available draft
<b>Noise</b>	Equipment is quiet	Equipment noise is noticeable	Equipment noise is objectionable

ALL-OUT PRESENTATION OF STANDARDS, via two-page newspaper advertisement in Milwaukee Sunday Journal last month as first in a series, demonstrates how local associations' enthusiasm for this new selling tool can be transmitted to millions of consumers

# Rating Heating Systems

Get Just What You Pay For!

## FEAR WIPED OUT!



**SHEET METAL CONTRACTORS' ASSOCIATION OF MILWAUKEE ASSURES YOU OF PROPER HEATING SYSTEMS AT A FAIR PRICE THROUGH EDUCATION, RELIABILITY AND RESEARCH.**

Starting in March, 1956, the Sheet Metal Contractors' Association of Milwaukee decided to do something about the apparent "fear" the public showed from inferior heating installations that showed up after the installation was made by bargain price contractors. Generally, the public was poorly informed as to what constituted a good warm air heating system. They were also misinformed as to what constituted a "fair price." As a result, they paid an exorbitant price for an inferior heating system that did not meet the minimum standards of proper warm air heating comfort.

For the past two years the Association has been informing you through full-page ads in The Milwaukee Journal on what constitutes a good warm air heating and cooling system. This series of heating standards (opposite page) is the final culmination of what you can expect in a GOOD, fair or poor system. Consult one of the Association members near you (listed below) to analyze your heating needs. Be sure before you buy. See a Sheet Metal Contractor Association member for your heating and cooling installation.

The Above Standard is for:

### SHEET METAL CONTRACTORS' ASSOCIATION of Milwaukee

<b>Walters Sheet Metal and Furnace Works</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Quenzel Heating and Sheet Metal</b> 400 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Demko Heating and Sheet Metal</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Rally-Markham Co., Inc.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>Water Sheet Metal Works</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>John B. Smith Heating &amp; Cooling</b> A. B. SMITH 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Brookman Furnace Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Knack Heating and Air Conditioning</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>Welch's</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Century Sheet Metal Works</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Brookman-Rice Corp.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Lakeland Sheet Metal Works</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>Wicacchi Furnace Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Community Heating and Air Conditioning Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Flour-Bro Sheet Metal Works</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>G. F. Marsh &amp; Son</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>Pipe Heating Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Greene Sheet Metal Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Iceberg Heating and Air Conditioning</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Alhambra Furnace Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>Rescue Sheet Metal Co., Inc.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Alto Heating and Air Conditioning</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>John F. Gird &amp; Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>C. A. Harkness Plumbing and Heating</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>Solder Heating &amp; Hike Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>North Heating Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Gen. F. Hertz &amp; Son</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Heater-Bridge Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>True Heating &amp; Sheet Metal</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Break Heating and Sheet Metal</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>The Krenner Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>E. V. Meadler Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001
<b>Valley Hardware</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Butter-Linking Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Michael Hens Sheet Metal and Heating</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001	<b>Alhambra The Heat Co.</b> 1001 W. 10th St. Milwaukee 18, Wis. Tel. 4-1001

Robert Supply Co., Omaha, Nebr. wholesaler.

#### "cooperative education"

"We are pleased and gratified with your stand on improving the standards of the heating dealer. We have seen the present deterioration of the heating business as a serious detriment to our industry. It is only through cooperative education such as this that we can build the warm air heating business up to the standards it should justly enjoy." — Charles W. Carter, The Carter, Donlevy Co., Philadelphia wholesaler.

#### "we lend our support"

"We sincerely believe this is one of the best articles we have seen in a long time and we would like to lend our support to its end." — Roy J. Trepanier, assistant manager, Gray Supply Co., Springfield, Mass. wholesaler.

#### "part of our '58 program"

"We have been discussing utilizing these standards as part of our 1958 program." — D. H. Davidson, field sales manager, Mueller Climate Control, Milwaukee, Wis. manufacturer.

#### "good reference and guide"

"Your efforts to encourage higher standards of home heating comfort are certainly justified. Your *Standards for Rating Heating Systems* in the July issue are a very good reference and guide." — W. D. Geiser, Self-Contained Air Conditioning, York Div., Borg-Warner Corp., York, Pa. manufacturer.

#### "good sales tool"

"The *Standards for Rating Heating Systems* are fine and certainly will make a good sales tool for dealers to use effectively in a sales presentation." — V. P. Black, vice president, Grant Advertising, Inc., Dayton, O. advertising agency for Airtemp Div., Chrysler Corp.

#### "separates men from boys"

"I personally think your heating standards program is excellent and it should go a long way towards separating the men from the boys in the heating installation and manufacturing field." — P. O. Bancroft, manager, marketing services, Worthington Corp., East Orange, N. J. manufacturer.

#### "we're ardent supporters"

"You will remember that Henry Rossell and I are ardent supporters of an understandable set of standards and feel that it is important for the National Warm Air Heating and Air Conditioning Association to work on a model heating code which could be used locally." — William P. Sheehan, manager, advertising and sales promotion, Air Conditioning Div., American-Standard, New York manufacturer.

#### "keep up good work"

"We would like to take this opportunity to express the interest with which we read your magazine and the informative material which is contained therein. Also, we would like to express the hope that American Artisan will keep up the good work." — Ross I. Evans, Jr., sales promotion department, Chattanooga Royal Co., Chattanooga, Tenn. manufacturer.

#### "helpful to my salesmen"

"The presentation of the heating comfort standards is something which we have been pushing in northern California. In your writeup I feel there is a tremendous amount of additional information that can be very useful and very helpful to my eight factory branch salesmen." — J. R. Montgomery, branch manager, The Coleman Co., Inc., San Francisco manufacturer.

#### "vitality interested"

"Every manufacturer of heating equipment should be vitally interested in your program to promote

the acceptance of heating system performance standards." — S. Morrison, president, Morrison Steel Products, Inc., Buffalo, N. Y. manufacturer.

#### "our aim and ambition"

"I am sure you know we are 100 percent behind any program to upgrade the industry as this has been our aim and ambition for many, many years." — J. J. Hildebidle, vice president, sales, International Heater Co., Utica, N. Y. manufacturer.

#### "should be read"

"The article in your July issue on *Heating Standards* — Great New Selling Tool is certainly a wonderful article. Not only should it be read by every dealer but the sales managers of the manufacturers should certainly bring it to the attention of their sales staffs who are calling on heating dealers." — D. M. W. Wilson, managing director, National Warm Air Heating and Air Conditioning Association of Canada.

#### "benefit to industry"

"You surely are to be complimented for the excellent job of acquainting the industry with the merits of a comfort standard and how it can help sell quality systems at a profit. Obviously, you have spent much time preparing this material. Let's hope it benefits the industry as you have intended." — Robert V. Main, chairman, Publicity and Merchandising Committee, National Warm Air Heating and Air Conditioning Association.

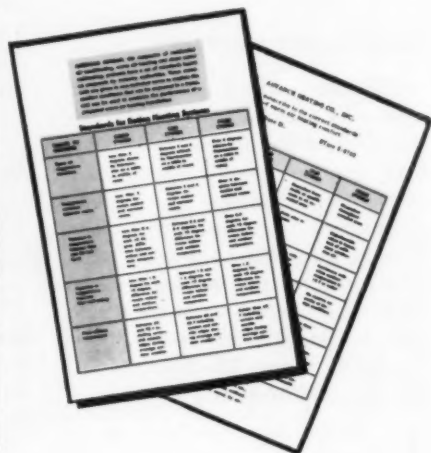
#### "the best selling tool"

"Artisan is certainly to be congratulated on the 16-page section on residential heating and selling aids which appeared in your July issue. The insert, *Standards for Rating Heating Systems*, seems to me to be the best selling tool that I have seen." — Ray O'Hara, executive secretary, Cuyahoga County Sheet Metal Contractors' Association, Cleveland.

These men will introduce the standards story



WHOLESALE'S SALESMEN who will help Indiana dealers in the use of heating standards to upgrade sales are: (l to r) Jim Carson, Tom Lipsey, Harry Hurt, George Quick, George Berkheimer, Ken Auten, Frank Smith, Henry Dinsmore and George Primich



## Wholesaler Meeting Kicks Off Statewide Standards Campaign

This Indiana wholesaler is planning big things  
for the dealers he serves in two states, via thorough promotion  
of Artisan's heating *standards* to upgrade future sales



FITTING THE STANDARDS into dealer training program is discussed by John Primich, general manager, and George Primich, sales manager, Berkheimer Co., Indiana wholesaler

"THERE IS NO QUESTION about the ability of the *Standards for Rating Heating Systems* to aid the dealer in obtaining a fair price for installing a good heating system," George Primich, G. W. Berkheimer Co., Gary, Ind., wholesaler, told the quarterly meeting of his company's department heads and sales staff. The company serves a large portion of Indiana and parts of northern Illinois through its main plant at Gary and branch offices and warehouses in Indianapolis, South Bend and South Chicago, Ill.

Part of the quarterly meeting August 17 was devoted to discussion of the heating *standards*, how they can be used by dealers to build a

sales presentation around a quality system, and how the Berkheimer Co. could help its dealers to put the *standards* to work. The company agreed to: 1) hold dealer meetings at each of its plants, and 2) instruct field salesmen to go over the *standards* story at each dealer's place of business to guide him in the use of the rating card to show prospects how to purchase a heating system.

### Good Practice Guaranteed

One point that developed during the meeting is that heating systems sold to meet the requirements listed under the *good* classification would require the use of all engineering



## in Indiana



STANDARDS will be explained to dealers throughout the wholesaler's territory, outlined in color

principles outlined in the installation and technical manuals of the National Warm Air Heating and Air Conditioning Association. It was further noted that systems designed to meet these specifications must utilize the proper quantity of materials and components to provide proper air distribution and that abbreviated systems would become the exception rather than the rule as they now seem to be.

Each person at the meeting received a 16-page reprint of the article that appeared in July American Artisan, plus several copies of the rating card. Additional copies of the reprint and card were ordered so their use at the dealer level might be expanded as rapidly as possible.

Personnel attending the meeting agreed that the steps outlined would make excellent discussion material for the dealer meetings to be scheduled at the plants. Because of the completeness of the articles and

the multiple subjects covered, the dealer meetings will be divided into about four sessions and a portion of the reprint will be used as a guide for each session. The series of articles contained in the reprint cover sales presentation, closing a sale, how to start a sales promotion program, how to follow through with prospects and points on overcoming prospect objections.

### Articles Cover All Steps

Each article in this special section is directed to the use of the heating standards in every phase of the development of the sale. None of the material is general in nature; it is all pointed toward upgrading a sale to provide a good heating system for the prospect and a fair profit for the dealer.

One example cited at the meeting was the case of a dealer who had just completed reading the July American Artisan when a prospect entered the showroom. After the usual amenities, the prospect said he wanted to purchase a heating system and that he intended to interview only five dealers before deciding which one to give the job. He had already seen three others and would see only one more before letting the contract.

### Standards Get Immediate Test

The dealer immediately recognized this prospect as a price buyer and asked him what he intended to use as a basis for selecting the dealer to do the work. After vague answers that seemed to indicate that dealer reputation and price would be the two major factors, the dealer said, "Mr. Madison, you are attempting to be selective in your purchase, and you are to be complimented. But you do not know how to buy a heating

system. Just a minute while I step into my office and get something you'll be interested in."

The dealer went to his American Artisan and tore out the card containing the *Standards for Rating Heating Systems*. He showed the card to the prospect and said, "Mr. Madison, here are 12 points to consider when purchasing a heating system. How many of these points were covered by the three dealers you visited before coming here?" The dealer proceeded to discuss every point with his prospect and pointed out in each case how the unwary prospect could become sold on the price of a system rather than on its merits.

### Standards Card Closes Sale

The prospect wanted to take the standards card home to show his wife, but the dealer, realizing that the sale had been made and that the wife's consent was all that was needed, explained that the card was the only one he had at the time, but that he would go with the prospect and explain to the wife about the card. This case history ended with the dealer selling the job at a price \$210 higher than the highest bid the prospect had received from the other three dealers.

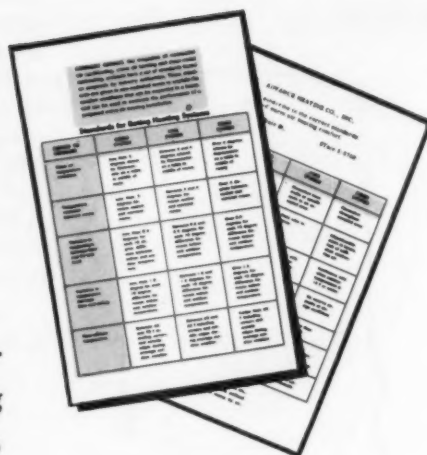
The Berkheimer firm plans to have its field salesmen use the card and the reprint of Artisan's special section to help their dealers upgrade the sale, just as in the case history related above. The company feels that if dealers can sell better systems, the prospect will not be the only party benefited. The dealer will earn better profits and pay his invoices sooner, which in turn will make more cash available at the wholesale and manufacturing level. John Primich, general manager of the company, had this comment to make: "The standards are the first guide ever compiled to aid the public in selecting heating equipment."

George Primich, sales manager, said, "The standards card is the best thing that has been done for the heating industry during my 25 years as a wholesaler."

**One dealer used the standards insert card to sell a heating system at a price \$210 more than the highest bid the prospect had received from three other dealers**

# Newspaper Advertising Puts Standards Story Across

Here's a starter for your newspaper advertising campaign built around the Standards for Rating Heating Systems—an ideal subject for effective advertisements



## WHAT'S YOUR WINTER COMFORT SCORE?

Now there's a way you  
can rate your own warm  
air heating system



Write or call us for a free copy of this Standards for Rating Heating Systems card, just released to the warm air heating industry, containing 12 points by which you can predict the level of comfort your family will enjoy this winter. A few simple measurements will show what, if anything, needs to be done to provide you with the maximum winter comfort. Our engineers will be glad to help you rate your system as "good," "fair," or "poor."

Send for this free card

Here are some of the benefits  
a "good" system should provide

- Less than 2 degrees temperature variation between coolest and warmest room
- Between 65 and 70 F floor surface temperature including corners and outside edges during average outdoor weather
- No noticeable drafts in any occupied area of the home
- Continuous blower operation when outdoor temperature is 58 F or under

**ADVANCE HEATING CO.**  
123 South Main St. Phone 5-6789

SAMPLE NEWSPAPER AD, adaptable to various dimensions, combines appeal to reader's desire for comfort with "teaser" in the form of partial presentation of the standards. Reader is invited to write or call for standards card to use in evaluating his heating system himself

REACTIONS TO DATE concerning Artisan's proposed *Standards for Rating Heating Systems* card and suggestions for promoting the standards to the public indicate that not only dealers, but wholesalers, manufacturers, associations and members of related fields are already thinking of effective ways to promote quality heating systems to the public they serve.

With such overwhelming enthusiasm becoming more and more predominant as the impact of the standards sinks in, there is little doubt that new ideas for promoting the standards will be born among all phases of the industry. Soon, manufacturers, wholesalers and associations should be turning out sales promotion tools, ad mats and all the other media now being used, built around various presentations of the twelve heating standards.

This process, unfortunately for dealers who are anxious to get started in their quality promotion campaigns, takes a lot of time and thought and these ready-made and professional promotion ideas may not be forthcoming in time for dealers to realize their effectiveness in the first part of the heating season. To help dealers get their early promotion programs off the ground, Artisan is following its original presentation of the heating standards with a suggestion on how to promote the standards via some of the most common—and effective—merchandising vehicles. Last month we presented a

suggested direct mail letter to accompany a blanket mailing of the *standards* card, plus some suggestions for using direct mail in introducing the *standards*. This article sets forth some ideas for preparing an advertisement to be inserted in your local newspaper, either as a one-shot ad or as a series to be run periodically.

### Plenty of Help Available

Newspaper advertising is probably the most common form of product promotion, and certainly one of the most effective. Most dealers have used it, and know that expert assistance is available from the paper's

advertising manager and his trained staff. Wholesalers and manufacturers are always willing to aid dealers in creating effective advertisements of their products.

The *standards* are made to order for newspaper advertising. Presented properly, they have natural appeal to the home owner, since they are addressed to him and emphasize the only thing that interests him—his family's comfort and well-being. Thus, the central theme of the ad is already established, and the only thing left for the dealer to do is to present them as forcefully as possible in order to draw the reader's attention away from the wares of the other advertisers long enough to make him

aware of the impact this new idea will have on his way of life.

### Two Types of Ads

For the time being, and for the purpose of promoting the *standards*, newspaper advertising should be of two general types:

1) A single large ad presenting the complete set of *standards* dramatically with copy explaining what the *standards* are, what they mean to the reader, and how to get more information about them. The same ad, or a slight variation, could be run on a regular insertion schedule.

2) A series, with each ad explaining one or more of the *standards* and

## Here's What Everybody's Talking About

For those who missed the July Artisan with its 20-page special section introducing the *Standards for Rating Heating Systems* card, the 12-point check list is outlined below, together with the performance characteristics listed on the card under the "Good System" column for each point. The card breaks each point down into "Good," "Fair" and

"Poor" performance ratings, with characteristics listed under "Fair" and "Poor" headings progressively less desirable than those produced by a "Good" system. Under ideal conditions, even the "Good" system can be improved.

We believe, and our conviction is borne out by endorsements from all phases of

the industry, that these standards, broken down into language the home owner can understand, constitute the longest step forward in fighting price competition with quality the industry has ever taken.

Reprints of the card in small and large quantities for display, presentation and mailing are still available.

### A Good heating system should produce the following comfort conditions:

#### 1) Room air temperature variations

Less than 2 deg shown by thermometer on a table in middle of room

#### 2) Temperature variation between rooms

Less than 2 deg between coolest and warmest rooms

#### 3) Variation in temperature between floor and 30 in. level

Less than 0.6 deg for each 10 deg difference between indoor and outdoor temperature

#### 4) Variation in temperature between floor and ceiling

Less than 1.0 deg for each 10 deg difference between indoor and outdoor temperature

#### 5) Floor surface temperature

Between 65 and 70 F including corners and outside edges during average outdoor weather

#### 6) Drafts

No noticeable drafts in any occupied area

#### 7) Ventilation

No stale odor in the house

#### 8) Blower operation

Continuous when outdoor temperature is 58 F or under

#### 9) Furnace capacity

Reserve capacity of 10 percent at design conditions

#### 10) Fuel burning efficiency

At least 72 percent

#### 11) Flue gas venting

0.02 in. water gage or greater available draft

#### 12) Noise

Equipment operates quietly

Any performance characteristics which do not meet the standards prescribed above would, of course, fall in the "Fair" or "Poor" column, and are so listed on the *Standards for Rating Heating Systems* card

reminding the reader that there are 12 *standards* in all. Each ad should offer a free copy of the *Standards for Rating Heating Systems* card as published in the July Artisan. (Quantity reprints are available from Artisan editorial offices.)

Later on, as the *standards* become better known among the public, small ads run regularly to promote the company name and identify it with the *standards* will be effective.

### Cooperative Ads Pull Sales

These two types of advertising can be combined very powerfully in a series of large cooperative ads with other dealers, featuring a presentation and explanation of the *standards* and a list of cooperating dealers who guarantee to adhere to the *standards*. The Milwaukee association has already kicked off an impressive *standards* campaign featuring a two page introductory ad last month in the Sunday Milwaukee Journal (see reproduction of their first *standards* ad on page 44). These ads, of course, can and should be followed up with smaller ads by individual dealers identifying their firms with the *standards*.

When *standards* advertising becomes available from manufacturers, wholesalers and associations, the dealer can rest assured that professional advertising people used their skills to best advantage to produce a pulling ad. Even then, however, the best ads will be little more than an elaboration of the *standards* card with brief explanations of each point. The difference between a good and a poor *standards* ad will be in the manner in which the type, illustrations and white space are arranged and the amount of impact used in the headline and copy.

### Get Professional Help

A local advertising agency will see that you get the best possible presentation; they will, of course, charge for their services. Newspaper ad managers are, by the nature of their titles, experts along these lines and can help you find the right words

and arrange the elements for maximum appeal. There are a few important points to remember so as to set the ad manager or agency on the track toward getting the most possible value for the expenditure.

First of all, the message must hit the home owner between the eyes. It must be directed to him personally, and must reflect an awareness of his problems and the ability of the *standards* and your company to protect his comfort. Don't try to say too much. The first ad is merely an introduction of the *standards* with an explanation of what they mean to his family. If line drawings are used, they should be expertly drawn (the newspaper or agency will have files of artwork to choose from). They should, along with the headline and overall appearance of the ad, attract the eye. White space is as useful as the illustrations and type it surrounds. It isn't necessary—or even wise—to fill every available inch of space with type; plenty of “air” around a headline or illustration will attract attention to that element. White space makes a layout look clean and uncluttered. While an ad which is packed full of words and pictures presents a more complete story, it's likely to reflect too imposing a reading chore for the average peruser to tackle. Use of the right size and face of type is a production problem which the newspaper or agency can handle.

### Make Reader Take Action

Some readership studies have shown that a well-presented small ad can outpull a larger fractional page ad which has less first-glance appeal. The advantage of a large ad is



ADVERTISING MANAGER of your local newspaper will help you set up an effective *standards* advertisement

that a more complete story can be told. Also of course, the larger the ad, the fewer ads it will have to compete with on the same page. Naturally, a full page ad or spread (two full pages facing each other) will attract maximum readership because there is nothing else on the page or spread for the eye to see, the type can be large enough to be read easily and the layout can be open enough to present a neat and attractive appearance. The effectiveness of a newspaper ad, like direct mail, is increased if the reader is prompted to take some action. An offer to send a *standards* card on request is a natural “teaser.” Don't be discouraged if the requests are limited at first—it doesn't mean the ad wasn't read.

One final note of interest which may eliminate some apprehension is that experience has pretty well disproved the belief that right-hand pages and outside positions draw a tremendous amount of increased readership. The point today is to create as attractive an ad as possible through the use of simple illustrations, active copy and ample white space. Reproduced on page 48 are suggested layout and copy for a fractional page newspaper ad which can be adapted to fit your needs and altered in size to conform with your budget and the newspaper's size requirements.

#### CARDS ARE AVAILABLE . . .

. . . in large or small quantities, for mailing, display, presentation or reproduction in advertising. We'll send ten cards free; quantity orders run two cents per card to cover printing costs.



**THIS SERIES** of articles, describing the impressive armory building program now underway by the U.S. Army Corps of Engineers throughout the country, is presented to help warm air heating dealers cash in on this lucrative new market



## Who To Contact for Armory Plans

**Here's how to obtain specifications for armory buildings in your area as the primary step toward submitting a bid for a profitable warm air heating job**

LAST MONTH American Artisan described the potential market which is being opened to warm air heating dealers by the 135 new, school-like armories which the U. S. Army Corps of Engineers plans to erect throughout the country. Because of the complexities of government work, this second article in the series deals with obtaining plans and specifications and selling the virtues of warm air heating.

Plans and specifications for new armories can be obtained from district offices of the Corps of Engineers. The fact that plans and specifications for one of these buildings might not call for warm air heating does not mean that a warm air heating system is unacceptable. Washington, D. C. headquarters has issued supplemental instructions to district offices that changing to warm air heating systems will meet with headquarters approval.

### Past Experience Shows How

At the time of preparing this guide for dealers, none of the plans or specifications had been released for bidding; therefore, a pattern for procedure must necessarily be outlined from past experience with government policy which governs issu-

#### TO WHOM IT MAY CONCERN:

Plans and specifications pertaining to the construction of a one-unit armory building for the Iowa National Guard, area 15,000 square feet; contained therein two systems of heating. The basic bid was for the installation of a low pressure steam heating system generated by a boiler with a net rating of 4500 square feet EDR when mechanically fired. System has vacuum pump return; wall fin radiation in all areas except the 7000 foot drill hall which has unit heaters. Control of system is by means of pneumatic temperature regulation system.

Alternate bid was for a winter air conditioning system. Heating equipment is a direct fired furnace. Automatic temperature regulation by electrical control system.

In the past three months there have been seven such armories contracted for and the average cost for warm air heating system is approximately \$7000 less than that of the steam heating system.

Alternate bid for warm air heating was accepted in all seven armories.

GERALD E. DU BOIS  
Brig Gen, Iowa NG  
Contracting Officer

LETTER FROM ADJUTANT GENERAL'S OFFICE explains why alternate bid specifying warm air was accepted over original wet heat specifications in National Guard armory last year. This attitude is carried over into new armory program, leaving door open for warm air bids

## Here are the proposed locations for 135 army projects

STATE	PROPOSED LOCATIONS	ESTIMATED COST	STATE	PROPOSED LOCATIONS	ESTIMATED COST
Alabama	Dothan	\$158,000		Malone	\$113,000
	Enterprise	97,000		Buffalo	444,000
	Florence	158,000		Ithaca	184,000
	Livingston	158,000	N. C.	Durham	225,000
	Opp	97,000		Albermarle	158,000
	Troy	158,000		Grainville	158,000
	Tuscaloosa	224,000		Brevard	97,000
	Tuskegee	158,000	Ohio	Cleveland	491,000
Arizona	Phoenix	444,000		Springfield	175,000
Calif.	San Leandro	444,000		Warren	175,000
	Santa Ana	263,000		Bryan	108,000
Colorado	Pueblo	263,000		Coditz	108,000
Conn.	Waterbury	263,000		Cincinnati	491,000
Delaware	Seaford	108,000		Columbus	382,000
	Dover	175,000		Fremont	108,000
Florida	Jacksonville	290,000		Newark	108,000
	Orlando	290,000		Mt. Vernon	108,000
	Pensacola	158,000	Oklahoma	Tulsa	57,000
	Tallahassee	158,000		Lawton	166,000
Georgia	Savannah	225,000		Miami	103,000
	Ft. Valley	158,000		Muskogee	166,000
	Gainesville	158,000		Ponca City	166,000
	Hartwell	97,000		Stillwater	166,000
	Tifton	97,000	Oregon	Eugene	184,000
Idaho	Boise	263,000		Medford	184,000
Illinois	Centralia	184,000	Penn.	Pensutawney	175,000
Indiana	N. Judson	113,000		Chambersburg	175,000
	Indianola	113,000		DuBois	175,000
Iowa	Davenport	184,000		Franklin	175,000
	Cedar Rapids	263,000		Glassmore	250,000
	Council Bluffs	184,000		York	175,000
	Maquoketa	113,000		Altoona	175,000
	Mason City	113,000		Bellefonte	108,000
	Sioux City	263,000		Chester	322,000
	Waterloo	263,000		Clearfield	175,000
Kansas	Great Bend	184,000		Pottsville	175,000
Kentucky	Owensboro	175,000		Lewisburg	108,000
Louisiana	Alexandria	103,000		St. Marys	108,000
	New Orleans	238,000		Indiana	108,000
Maine	Bridgeton	113,000	S. C.	Clemson	225,000
	Dexter	113,000		Spartanburg	158,000
Maryland	Hagerstown	175,000		Orangeburg	97,000
	Cumberland	175,000	Texas	Texarkana	166,000
Mass.	Attleboro	184,000		Amarillo	166,000
	Boston	516,000		College Station	
Michigan	Pontiac	263,000		(Bryan)	238,000
	Traverse City	184,000		Dallas	263,000
	Jackson	263,000		Marfa	103,000
Minnesota	Cannon Falls	113,000		Marshall	103,000
	Faribault	184,000		San Marcus	103,000
	Wabasha	113,000		Wichita Falls	103,000
Miss.	Greenwood	158,000	Utah	Salt Lake City	263,000
	Jackson	290,000	Vermont	Montpelier	184,000
	Laurel	97,000		Chester	113,000
	Meridan	158,000	Virginia	Covington	108,000
	Starksville	158,000		Newport News	250,000
Missouri	Bethany	113,000	Wash.	Everett	184,000
	Marysville	113,000		Seattle	492,000
Montana	Glasgow	113,000		Tacoma	263,000
	Great Falls	184,000	W. V.	E. Rainelle	108,000
Nevada	Reno	184,000		Fairmont	108,000
N. H.	Portsmouth	184,000		Ripley	108,000
New York	Hempstead	159,000		Wheeling	175,000
	Watertown	438,000	Wisconsin	Appleton	263,000
	Ogdensburg	237,900		Madison	63,000
	Queens	482,000		Eau Claire	184,000
	Elizabeth Town	113,000		Madison	63,000
	Kingston	113,000		Richland Center	113,000

ing plans and specifications, submitting bids and letting contracts. The procedure outlined here has proved very successful in Iowa where three National Guard armory contracts for warm air heating systems were let in 1955 and seven additional contracts for National Guard armories with warm air heating systems were awarded in 1956.

Iowa armories now using warm air heating systems are located at Shenandoah, Denison, Chariton, Charles City, Spencer, Audubon, Knoxville, Marshalltown, Ida Grove and Perry.

### Warm Air Sold Down the Line

Because warm air systems had never been used for heating armories, the ability of warm air systems to provide fast response to temperature and ventilation requirements, zone control, operating and maintenance economy and lower initial costs had to be patiently explained to every person involved in the armory building program. Final approval for the first job was obtained after the warm air story had been presented to Gerald E. Du Bois, Brigadier General, Iowa National Guard, who heads the Adjutant General's department for the state of Iowa.

Selling warm air heating systems to people who are unfamiliar with its application in large structures is a time-consuming undertaking, but once the bid has been accepted, the time proves well spent.

The sales process begins with the engineer handling the plans. The salesman must be prepared to back up every statement he makes with literature and other documented evidence that warm air heating is fulfilling every one of the claims made for similar applications. Manufacturers' product literature, engineering data and installation manuals were used effectively in the initial Iowa presentation.

### Alternate Proposals Made

Once the specifying engineer had been convinced, a set of specifica-

tions and blueprints was obtained. With this material at hand, an alternate set of proposals was made. The equipment recommended in the alternate specifications was equal or superior in every respect to the initial specifications. This claim was once again backed up with documented evidence and manufacturers' specification sheets.

The proposed layout for air distribution was detailed so there could be no doubt of the system's ability to provide sufficient heat at design conditions as well as adequate ventilation. The Btu and cfm input was calculated to show that any excessive or abnormal load in any of the special purpose rooms would be adequately handled. The effectiveness of zone control, quick pickup after shutdown periods and tempered air delivery was reiterated.

The same steps had to be repeated each time the sales approach advanced from consulting engineer to architect to contracting officer to department head and finally to the adjutant general.

Once final approval of the proposed system was obtained, the general contractors bidding for the armory job were contacted and asked to accept alternate bids. Proof of approval for alternate bids had to be shown the general contractors. The same sales story which had been told to the consulting engineer was repeated to the general contractors to assure them that any legal obligations they assumed with regard to performance when signing the contract would be fulfilled by the heating equipment and proposed air distribution system.

### Warm Air Story Spreads

All the selling effort involved here had a dual value. In addition to selling the merits of warm air heating for armory applications, it has helped to open the door to other commercial installations. Architects and consulting engineers who had not thought about using warm air systems for certain applications are now considering their use. General con-

tractors finding warm air specified for types of jobs that previously had employed other types of heating are no longer hesitant about accepting alternate bids in favor of warm air heating systems.

Often official notice of contemplated armories for certain areas will appear in local newspapers, construction news bulletins and public notices from state and local governments. Adjutant generals' offices, architects and consulting engineers are likely spots to uncover plans for proposed jobs of this type. The warm air heating dealer who wants to undertake jobs in the growing commercial field will find the next two articles in this series of considerable value. Next month the subject of estimating and submitting bids will be covered, and the following month we will describe recommended installation practices.

The editors acknowledge the cooperation of Elwood Arendts and Homer Feyen, Campbell Heating Co., Des Moines in providing the information for this article.

## Survey Ranks Phone Book High as Prospect Puller

THE YELLOW PAGES of the telephone book comprise a vital link between the desire for something and the actual purchase, according to the results of a controlled test by a telephone company to see just how effective yellow page listings are. The survey, reported in Lennox News, suggests that people have been trained to recognize the importance of the classified section to advertisers, and as a result, find it faster and easier to look in the yellow pages for the address or phone number of a business establishment.

This natural advantage has been developed to an even greater extent by the promotional activities of various telephone companies who continuously repeat the slogan, "find your dealer in the yellow pages."

To make a test that would mean anything, all possible variables had to be removed. A number of different business firms in several towns were selected. Each dealer was assigned a special phone number listed only in the yellow pages of his phone book, under the manufacturer's trade mark heading. The phone number did not appear in the alphabetical section of the directory and was not used in any form of advertising used by the dealers. A meter registered every incoming call on each of the test phones assigned the special number.

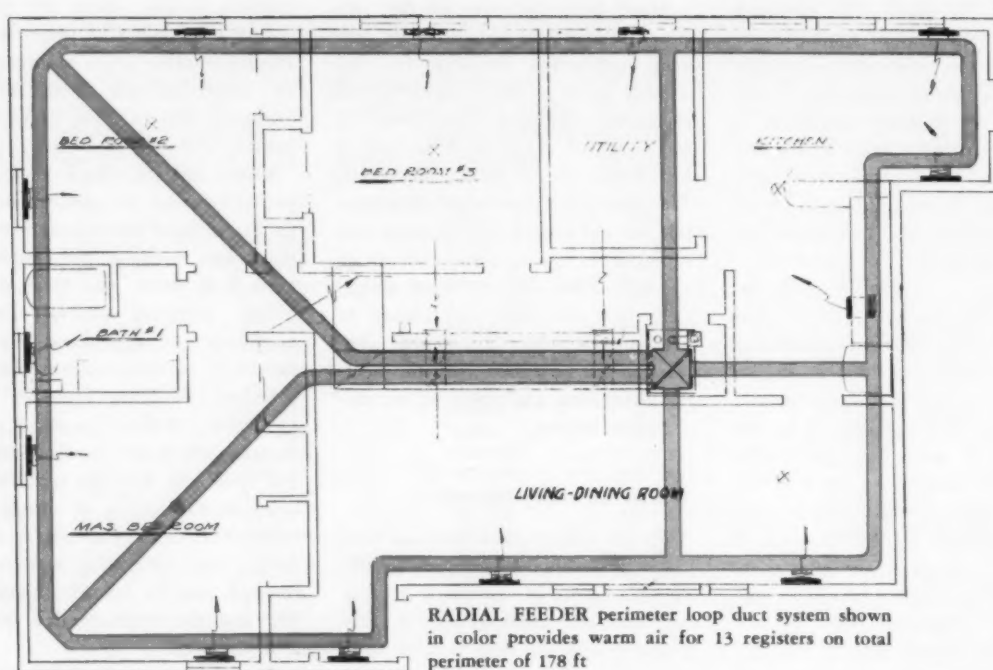
Since the advertised lines varied considerably from a standpoint of volume purchasing, the number of calls

per month to the special phones varied considerably, from 26 to a dealer handling a line of trucks to 546 per month to an automobile tire dealer. The results are said to have been even more impressive than the telephone company had hoped for.

This bears out the belief held by many heating-cooling dealers and sheet metal contractors, as well as wholesalers and manufacturers. Obviously, the telephone book is one of the most effective yet inexpensive vehicles for a dealer to use to tie in with a manufacturer's national advertisements. A listing under a manufacturer's brand name and symbol can pull inquiries where even bold face listing in the alphabetical directory may escape notice.

With new home construction dropping considerably, the article points out, a larger share of new business will have to come from the remodeling market. And to reach home owners in the process of replacing old furnaces or adding summer air conditioning, the yellow pages take on new significance.

Dealers who are interested in being listed under a manufacturer's name and nationally advertised trade mark in the yellow pages can find out costs and procedures for this effective and long-life advertising media by contacting the telephone company, wholesaler or a representative from the manufacturer.



## Heating Study Evaluates Perimeter Loop System

**. . . imbedded in a concrete floor slab  
with five 8 in. feeder ducts supplying air to an 8 in.  
perimeter loop and 13 supply registers. These  
findings will be valuable to dealers in modernization jobs**

IMPROVED ENGINEERING and installation practices are inevitable when performance data from actual jobs can be evaluated to point out the principles employed and the results of their application. With this objective in mind, the National Warm Air Heating and Air Conditioning Association undertook a study of five forced warm air heating systems in different houses that point the way to better heating performance, from both a comfort and a mechanical point of view. The five articles in this series are reports of the results obtained from the study.

Dealers who, on each job, study the physical aspects

of the building, the type of equipment used and its operation characteristics will find ways to improve their current practices with greater benefit to the customer and fewer service problems to solve.

### **Thirteen Supply, Five Return Registers Used**

This month's article describes a radial feeder, perimeter loop duct system imbedded in a concrete floor slab. Five 8 in. feeder ducts supply air to an 8 in. perimeter loop. Thirteen registers are located along a total perim-



eter of 178 ft or the equivalent of one register for every 13.7 ft. The registers are baseboard types with top openings along a 24 in. dimension. Five return intakes are located along the baseboard of the inside partition walls.

The house is a one-story, stucco frame structure built over a concrete floor slab. It is well insulated and medium size. Overall dimensions are 33 ft 9 in.  $\times$  50 ft 6 in. The house was completed in 1954 at a total cost of \$15,000 including land and garage. The cost of the heating system, including the prefabricated chimney, was \$760, of which \$300 was considered to be the cost of the air distribution system in the slab.

### Slab Edge Is Insulated

The floor is a 4 in. thick slab insulated along the edge between the footing wall and the slab with 1 in. insulation. The insulation increases to 2 in. below the footing wall offset.

The stucco frame walls have 2 in. insulation and the ceilings have 4 in. batts. The interior finish is lath and plaster. The attic has two 10 in. diameter vent openings.

The doors and windows are weatherstripped and have storm sash and storm doors. The windows are loose. The doors fit tightly.

The design temperature is -20 F; the degree days for the locality average about 8000 each season.

The design heat loss for the house is 50,967 Btuh, including the loss through the concrete floor. For the 1520 sq ft floor area involved the heat loss amounts to 33.5 Btuh per sq ft of floor area.

The furnace is a counterflow oil-fired unit. The concrete subfloor plenum is 24 in. deep, 24 in. wide and 26 in. in length. The oil burner has a 0.75 gph nozzle and a bonnet capacity of 84,000 Btuh. The 10 in. blower is driven by a 1/6 hp motor.

### Imbedded Ducts Supply 13 Registers

The imbedded perimeter duct and the branch ducts, all of which are 8 in. in diameter are placed in the slab to supply 12 extended baseboard registers and a single 14  $\times$  2 1/4 in. register in the toe-space of the kitchen cabinet.

All the extended baseboard registers have 24  $\times$  1 in. slot openings at the top for vertical discharge of air.

Two 12  $\times$  6 in. return intakes and a single 30  $\times$  6 in. intake are spaced along the baseboard in the hallway. Two other 12  $\times$  6 in. intakes are located in the baseboard of the inside partition wall of the living room. All intakes are connected to a return duct located in the attic and then to the return air plenum over the furnace. The return air duct in the attic is insulated.

A 14  $\times$  6 in. opening in the ceiling permits attic air to enter the furnace room for combustion.

The weather was cold during the three day test period. For two out of the three days the temperatures were below zero. The first day the temperature ranged from

## FOURTH IN A SERIES OF FIVE ARTICLES ON UNUSUAL HEATING SYSTEMS

zero to 9 F; on the second and third days the temperatures varied from -4 F to -22 F. There was full sunshine and a moderately strong wind from the west most of the time. Most of the data was recorded in sub-zero weather.

The following control settings were used during the test period:

Room thermostat setting (day and night) ..	75 F
Room thermostat differential .....	1/2 F
Fan switch cut-in point .....	130 F
Fan switch cut-out point .....	100 F
Limit switch cut-out point .....	220 F

The thermostat is located at 60.5 in. above the floor and a 6 in. barometric draft regulator is used in the smoke pipe. No preliminary adjustments were made before the test was started.

### No Drafts Reported

The house was occupied by a young couple. The occupants were not conscious of any system deficiencies; they stated that no drafts existed. The house had not been occupied long enough to obtain any fuel records.

A summary of room air temperatures and temperature differentials between rooms is given in Table 1. These recordings were made when the outdoor temperature was -6 F and the thermostat was set at 75 F.

Temperature differential between the floor and ceiling was 3.5 deg which amounted to only 0.43 deg per 10 deg change in indoor-outdoor temperature difference. Similarly, the temperature differential from floor to 30 in. level of 1.5 deg amounted to only 0.19 deg per 10 deg change in indoor-outdoor temperature difference. Both values are low.

The four rooms closest to the furnace varied in temperature from 74.0 F to 75.7 F, whereas the two distant bedrooms were 71.0 F and 72.6 F. The maximum deviation in room air temperature was, therefore, 4.7 deg on a -6.0 F day.

The variation in room air temperature at the 30 in. level was only about 1.0 deg during a burner cycle. The temperature control can be considered as most satisfactory.

### Slab Absorbs Temperature Swings

The range of register air temperature varied from 4 to 43 deg during a burner cycle, with an average range

TABLE 1—SUMMARY OF ROOM AIR temperatures and temperature differentials at -6 F outdoor temperature, 75 F thermostat setting, shows temperature control to be acceptable

Room	Bedroom # 1	Living Room	Bedroom # 2	Bedroom # 3	Dining Room	Kitchen	Average
3 in. below ceiling	72.3	79.0	74.3	75.5	76.6	75.4	75.5
30 in. level	71.0	75.7	72.6	74.3	74.8	74.3	73.7
3 in. above floor	71.1	74.8	70.0	71.9	72.5	72.5	72.1
Differentials between levels							
Ceiling-floor	1.4	4.2	4.3	3.6	4.1	2.9	3.5
30 in. level-floor	-0.1	0.9	2.6	2.1	2.3	1.8	1.5
Floor surface	...	73.2	...	...	72.7	72.9	72.9
Floor air to floor surface	...	1.6	...	...	-0.2	-0.4	0.3

Temperatures in deg. F

Note — All temperatures in above table taken in approximate center of room.

TABLE 2—FLOOR SURFACE temperatures were recorded at -6.0 F outdoor temperature when thermostat setting was 75 F

Room	Floor Surface Temperature, F	
	Center of Room	Exposed Wall
Living	73.2	76.1
Bath	...	66.6
Utility	...	68.0
C. Hall	...	73.3
Kitchen	72.9	75.5
Dining	72.7	...

of 26 deg, which is not unduly large. In this connection, the evidence showed that the warm air plenum temperature varied over a range of 55 deg during a burner cycle, and the data recorded shows a register air temperature variation of half this amount. This indicates that the floor slab absorbs some of the swings in temperature, and gives the system a fly wheel characteristic.

The registers nearest the furnace showed the highest register air temperatures, particularly when the burner cut off. Furthermore, the registers for the two far bedrooms and the bathroom showed the lowest register air temperatures. This accounts for the fact that the two bedrooms were about 3.5 deg cooler than the rooms closer to the furnace.

### Register Air Velocities Low

With the exception of one register in bedroom 2, the register air velocities were less than 230 fpm. The air flow rates calculated for this type of register are not reliable because of the difficulty of measuring register air velocities from a narrow slot. The flow rate of 653 cfm measured at the return intakes is considered more reliable.

Since data on the performance of a perimeter loop system in a floor slab during extremely cold weather is not frequently available, a special study was made of floor surface temperatures on this installation which is a typical loop system with the perimeter ducts embedded 2 in. beneath the slab surface. It varies from the practice recommended in Manual 4 only in that two feeder ducts ran close together and parallel along the inside partition of the living room for a distance of about 16 ft.

### Bedroom Floor Temperatures Unobtainable

The floor surface temperatures were not taken in the bedrooms because of the difficulty of attaching the

thermocouples to the waxed cork tile floors without damage to the floor itself. The feeder ducts slope from 2 in. below the slab where they join the loop duct to 8 in. below the slab surface where they enter the plenum under the furnace. Because of the floor surface difficulty, most of the readings are concentrated in the south half of the living room and dining room, and in the north side of the kitchen and utility room.

The coldest (58.5F) floor area observed was in the northeast corner of the kitchen in an area too small to be occupied. Here along the north wall between the perimeter duct and the outside edge of the slab the surface temperatures varied from 65.5 to 68F. These temperatures are not low enough for discomfort at these locations.

Between the perimeter duct and the south wall of the living room and dining room the floor surface temperatures varied from 68 to 85F, and between the duct and the north wall of the kitchen they varied from 69 to 85F.

### Temperatures Higher Away from Walls

A sharp temperature increase occurs as the distance from the exposed walls increases. Immediately over or adjacent to the embedded ducts, the floor surface temperatures were between 70 and 85F and at five stations were between 90 and 96.5F at the time of the test. These five high temperature stations were near the registers in the utility room and living room but not in a normal zone of occupancy.

The temperatures were also measured in the central hallway adjacent to and parallel with the two feeder ducts supplying the west end of the perimeter loop. Measured about 15 in. from the side of the duct, the temperatures ranged from 77 to 81F. Undoubtedly they were higher closer to the partition between the hall and the living room.

The floor surface temperatures in the living room directly over the two parallel feeder ducts were not taken. This area of the floor is covered with a large davenport. This was undoubtedly a very warm area. The temperature of the return air entering the intakes in the living room wall immediately above this area was 76F.

The temperatures recorded are probably the maximum that will be obtained with the present furnace air flow rate and control settings.

TABLE 3—WALL AND GLASS surface temperatures at 76 F thermostat setting when outdoor temperature was -5 to -8 F reflect considerable solar effect

Time	Out- door Temperature	Living room South exposure surface	Bedroom 3 North exposure surface	
		Glass	Glass	Wall
9 a.m.	-5	72.0	52.0	61.5
10 a.m.	-6	89.0	54.5	62.5
11 a.m.	-6	101.0	58.0	62.0
12 a.	-8	106.5	57.0	62.0
1 p.m.	-7	106.5	58.0	61.5
2 p.m.	-7	101.5	58.5	61.5
3 p.m.	-7	91.5	56.0	61.5

temperatures in deg F

During the previous night, when the outdoor temperatures were about zero, the furnace produced bonnet temperatures that reached 160 to 165F on each cycle. During daylight test periods when bonnet temperatures were recorded, the outdoor temperature was below zero. However, there was considerable solar heat gain through glass areas which apparently had no effect on maximum bonnet temperatures which remained near 160 F during burner cycles averaging about two per hour.

Some of the recorded floor surface temperatures approach or exceed the maximum floor surface temperatures recommended for good practice. Fortunately, the excessively warm floor areas are small and not in zones of normal occupancy, but this does not appear to be necessarily a part of the system design. While no temperature readings were taken of the floor area over the parallel feeder ducts in the living room, other temperature readings indicate that this would be a very warm floor area and it was only furniture placement and the type of furniture used that made this area even a zone of limited occupancy.

### Parallel Ducts Should Be Insulated

It would appear that parallel ducts such as these should be insulated or the position of these feeders so arranged as to avoid such excessively warm areas. The other hot areas, principally over the loop ducts, might be cooler if the maximum temperature of the air circulated through the system were lower. The temperature rise through the furnace was about 100 deg, based on a continued operation of several hours during -20F weather when the maximum bonnet temperature was steady at about 165F and the return air temperature was 64F. The corresponding air flow rate, as measured at the return air intakes, was about 650 cfm, which corresponds to 3.2 air recirculations per hour. An increase in the air flow rate to provide an 80 to 85 deg temperature rise through the furnace would not have objectionably increased the velocities through the registers because of their locations and type, and would have given somewhat lower floor surface temperatures. On the other hand, some additional balancing would have been required for the bedrooms on the west end of the house since the floor surface temperatures, register air temperatures, and room air temperature were lower in this area than in the rest of the house, even with the system adjusted as it is.

Surface temperatures were taken of the north wall in bedroom no. 3 for a six hour period on January 26. This wall is constructed of 3/4 in. stucco on 1 in. wood sheathing and paper, 2X4 in. wood studs, with an inside surface of lath and plaster and 2 in. insulation batts between the studs.

Similar surface temperature readings were taken on the inside glass surfaces of the large fixed picture window in the south wall of the living room and the east window in the north wall of bedroom 3. The picture window is fixed; the one in the bedroom is double hung and weatherstripped. Both have storm sash.

The house is so oriented that the long axis runs almost due east and west. The long sides face due north and south. The south side receives considerable sun exposure while those on the north receive none.

Glass and wall surface temperatures for north and south exposures are given in Table 3 for the period when the thermostat was set for 76F and the outdoor temperature varied between -5 and -8F.

A relative humidity of 25 percent for an outdoor air temperature of -10F is high, and indicates a tight house. The owners noted no window condensation.

### Burner Seems Adequate

One cold night when the outdoor temperatures varied from zero to +12F, the burner operated continuously from 5:20 p.m. to 8:20 a.m., or 15 hours. As a matter of interest, after 8:20 a.m. the outdoor temperatures dropped from -3F to -8F late in the afternoon, but the burner operated intermittently. Apparently, the sun effect was sufficient to reduce the heat demand. In any case, the burner appears to be adequate for the system.

The blower operates in about the same manner as the burner; in fact, short periods were observed when the blower was not operating even in sub-zero weather. The mobile laboratory investigator noted: "The auxiliary fan switch starts the fan first, then the combination control fan switch takes over." In any case, it seems a lower setting of the fan switch would be desirable instead of the 130F cut-in point now in use. The results would be more apparent in mild weather than in severely cold weather, although it is true that a slab floor system of this type tends to mask deficiencies in control operation.

Another unusual heating system will be described next month in the conclusion of this series.

This company gives its servicemen an incentive to thoroughly inspect each customer's heating system in order to discover leads for new equipment sales. They believe that . . .



WHEN SERVICE CALL comes in, the service manager can check customer's previous service record in file near his desk

## Servicemen Should Be Put on the Sales Team

THE SALES MINDED dealer usually tries to make his entire organization sales minded, too. Atlas-Butler Co. of Columbus, Ohio, is a good example of how this can be accomplished. This company's goal is to have "everybody selling," President Alan McKnight declares.

The firm's service manager, Nelson Evans, explains how his department has worked toward this goal. "The service department," he says, "is usually accepted as only an expense item. But we feel it is an important area for sales development that needs to be exploited."

He points out that a company's servicemen are invited into hundreds of homes each year. While there they have an excellent opportunity to judge whether or not new equipment is needed. They will discover, for example, many homes with outdated thermostats and humidifiers that no longer function properly, and noisy gas valves that could be replaced with newer, silent models. These are all sales opportunities.

### Customers Trust Servicemen

"We have found," Mr. Evans states, "that if a serviceman says new equipment is needed the customer finds it more believable than if a salesman makes the same statement. They seem more willing to trust the serviceman's recommendations."

Servicemen are encouraged by the company to make careful and complete inspections of all equipment when they go on a service call. They carry all necessary field testing equipment to assist in searching for present and potential trouble. "We have found that the average serv-

iceman does not inspect the customer's equipment thoroughly enough," Mr. Evans says. "We therefore give our servicemen an incentive to inspect and an incentive to sell."

The company's servicemen are paid 5 percent commission on any parts and equipment they sell. The servicemen also receive \$5 for each lead they discover which later results in the sale of a new system. Leads are turned in daily to the service manager. He then has a prospect card prepared which is turned over to the sales department.

When a salesman makes a sale as the result of one of these leads, \$5 is paid to the serviceman responsible from the salesman's commission. The company finds the salesmen are more than happy to pay the \$5 since the serviceman not only has opened the door, but he has also taken the first step towards convincing the customer.

Such a program must be handled carefully, according to Mr. Evans. "You have to make it clear that parts are to be replaced only when there is a genuine need. However, if a part is not in reliable working order, we recommend replacement, not repair. A new part can be warranted for one year, while a repaired part cannot. In the long run replacement will save money for the customer and the company."

Theoretically a serviceman under this program could make more money by selling the parts to fix an old furnace, rather than turning in a lead for a new equipment sale. To date, the company has not found this to be the case. In a recent seven month period four servicemen turned in 45 leads which resulted in 38 sales. The





IF SERVICEMAN reports new equipment is needed, a prospect card is filled out for the sales department by secretary Delores Hucle

service manager keeps a record of leads turned in by the servicemen to see that salesmen follow through and that his men collect their commission when the sale is made.

#### Return Service Calls Cut

Atlas-Butler has found that the policy of putting the serviceman on the sales team not only results in a larger sales volume, but it also pays off by cutting the number of return service calls. When servicemen thoroughly inspect a customer's equipment, they frequently are able to discover potential trouble and prevent it. "When this program first went into effect it was embarrassing to us to find that equipment we had been servicing for years was in serious need of replacement," Mr. Evans admitted.

A notable advantage of the service department sales program is its low cost. It costs nothing for a serviceman to say, "Mrs. Jones, have you ever considered replacing this old furnace with a modern heating system?" In a brief conversation he can determine if the customer is interested. If there is interest, it's an easy matter to turn in a lead. The extra compensation earned by servicemen through selling is paid by separate check in order to make them more aware of the value of these selling efforts.

#### Seek Increased Modernization Volume

The service department's sales program was started because the company wished to increase its business volume in the old house field. The company has been doing about 60 percent of its volume in new house work. The area served by Atlas-Butler is particularly ripe for modernization sales. Gas has been a popular residential fuel for 20 years or more in the Columbus area, and much of the automatic heating equipment is obsolete. This year with new house construction in a slump, modernization work is more important than ever to the dealer trying to maintain business volume and profits.



LEADS FOUND by servicemen are checked by service manager Nelson Evans to see that salesmen follow through and servicemen collect commission

The company's service department is organized for top efficiency. Servicemen take one-week turns on call for night duty. The man on duty is paid \$10 extra for the week whether he receives any calls or not. This makes the men more willing to take night duty. Night calls come in to a telephone answering service which relays the call to the serviceman at his home.

The men are paid time and a half for calls after six p.m. and are paid from the time they leave home until they return. These charges are explained to customers when they call. Frequently, they are willing to wait until the next day, unless a real emergency exists.

#### Servicemen Make Own Collections

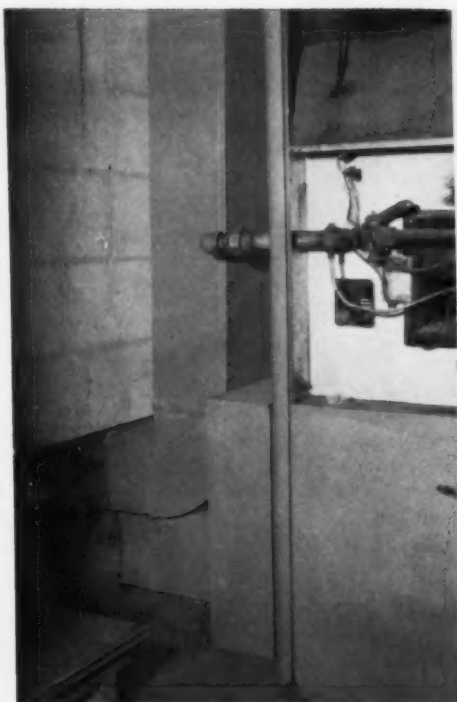
A program was recently started to collect for all service calls at the time they are completed. Servicemen are paid 25 cents for each bill collected. They are provided with cash to enable them to make change. Collections made by the servicemen cut bookkeeping work to a point where the 25 cents paid for collection actually costs the company nothing.

Frequently, when collection plans do not meet with success, it is because the men do not know how to ask for the money. To help the servicemen learn this technique, Atlas-Butler conducts special training meetings featuring "role playing." In role playing, one serviceman will play the part of the customer and another the part of a serviceman attempting to make the collection. The men actually act out how it might be done. Other servicemen in the audience make suggestions and offer constructive criticism. Each serviceman has a chance to play the collector's role and get his share of advice.

As a final word on making servicemen a part of the sales team, Mr. Evans stresses the importance of appearance and courtesy. "It is important to keep the customer pleased and convinced that your company is best suited to serve him. Appearance and courtesy go a long way toward building such confidence and good will."

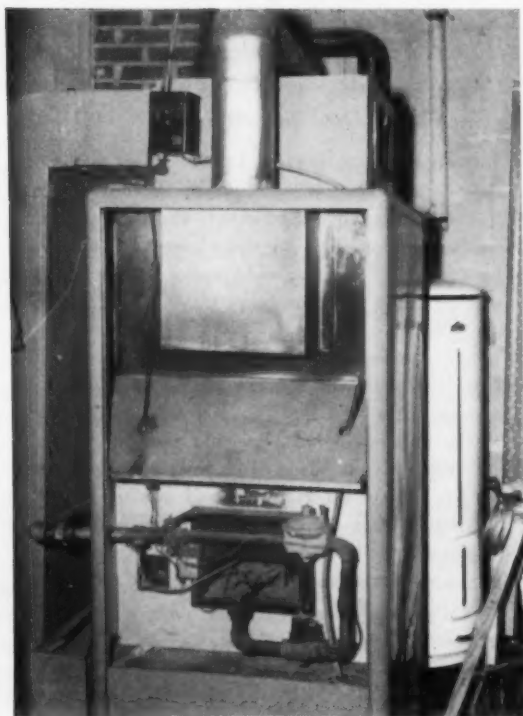
# Bungled Heating Job

**THE PROBLEM:** a poorly-installed heating over a crawl space with annexed utility provided inadequate air distribution.



## BEFORE

SUPPLY TRUNK LINE (left illustration) was sized too small in order to pass through masonry opening. ABRUPT TAKEOFF for supply runs (right illustration) from short plenum restricted air delivery. (Note short return duct plenum under supply duct)



POOR BURNER ADJUSTMENT was responsible for high fuel bills. Smoke stains on inside panel are evidence of incomplete combustion — another operation that had to be handled before the job was done

THE IMPORTANCE of applying proved engineering practices to laying out an air distribution system and balancing equipment is underlined by the results of a modernization job recently completed by Robert L. Weaver, S. R. Weaver Furance Co., Inc., Columbus, Ohio. The Cape Cod house is built over a crawl space. The upper floor of the building was not finished for occupancy when the job was undertaken. The 28 × 22 ft house has a 10 × 10 ft utility room attached to the rear and set on a concrete slab.

Structural features of the house include concrete block, stucco covered walls with no insulation, 8 in. joists supporting the 616 sq ft first floor which contains a living room, one bedroom, a combination kitchen-dining area and bath. The utility room, which houses the furnace, a gas-fired hot water heater, washer, an unvented gas-fired laundry dryer and a refrigerator, adds an additional 100 sq ft of usable space to bring the total to 716 sq ft. The heat loss of the building, including the utility room, is 64,000 Btuh.

### Top Discharge Turned to Crawl Space Ducts

The house was erected in 1951 and the heating system was installed for \$590. A 150,000 Btuh input gas-fired furnace was installed. In order to locate the duct system in the crawl space, the 22 × 22 in. top discharge from the furnace was turned 160 deg to reach a 36 × 16 in. opening through the foundation wall to the crawl space.

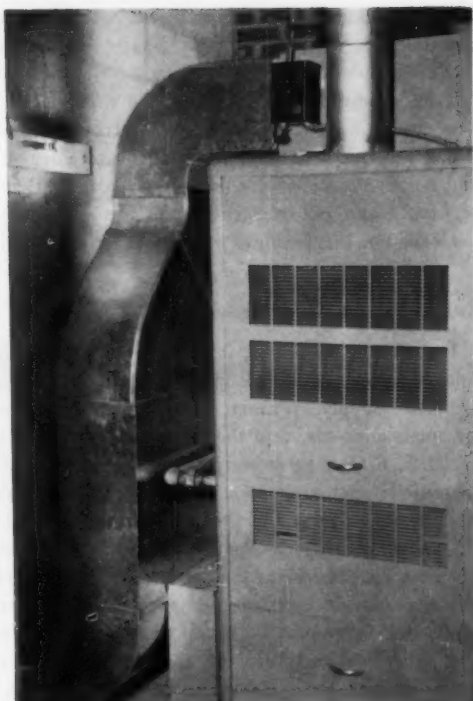
# Gets Its Face Lifted

system in a hard-to-heat house built  
room housing an oversized furnace which  
Big job? Here's how it was handled



## AFTER

AN EXTENDED PLENUM (left illustration) with tapered takeoff provides adequate air volume to all branch ducts. ENLARGED SUPPLY TRUNK line (right illustration), designed to meet the required air volume, was installed in modernization job



The supply trunk was reduced to 18 × 8 in. at the point where the duct turned to parallel the side of the furnace. The 25 × 20 in. return air opening in the furnace was reduced to fit a 14 × 8 in. return duct by blocking off the unused portion of the opening. An 11 in. blower using a 1/3 hp motor supplied the air movement.

The 18 × 8 in. supply trunk protruded 5 ft through the foundation wall. Five 7 in. round supply ducts extended from this plenum, each to an inside partition wall with low wall registers. Two duct runs supplied the living room; the bedroom, kitchen-dining area and bathroom were each served by one duct run.

The 14 × 8 in. return air plenum also protruded 5 ft through the foundation wall directly beneath the supply duct. Three 7 in. round ducts handled the return air, one each from inside the partition walls of the living room, bedroom and kitchen-dining area.

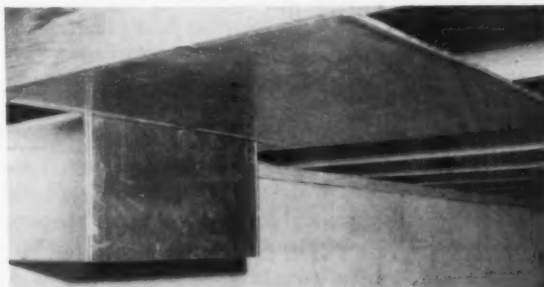
The customer complained that the house would not heat on cold days, had cold floors and was damp. He said the fuel bills were excessive even after an attempt had been made to cover the warm air ducts with batt insulation.

### Original Job All Wrong

When Weaver Furnace Co. was called in to see what could be done, Bob Weaver found that the furnace was 1 7/8 times the capacity required, the supply air duct was 65 percent too small, return air was restricted because



PERIMETER LOCATION was specified for new supply openings where building construction permitted



PANNED JOIST SPACE and transfer boxes were added to rebuild the return air system

the air intake duct was 54 percent too small, no earth covering was used in the crawl space, no provision was made for outside combustion air, no vent was provided for the gas-fired laundry dryer and the furnace burner was coated with soot inside and out (the filters astonishingly, were clean), the humidifier was clogged, supply and return registers were poorly located, and the number of supply and return openings for the exposed areas of the walls was insufficient.

### Entire System Redesigned

To solve this problem, it was decided to redesign and enlarge the return duct system, add two more return and two more supply openings, bring in an outside air duct for combustion air, vent the laundry dryer to the outside, install 50 lb roofing paper in the crawl space, reduce air delivery to match the house cfm requirement, readjust the fuel input to match the house heat loss, and adjust the control settings to provide continuous air circulation any time the outside air temperature is 38 F or lower.

The return duct system was redesigned by forming a 26 × 8 in. plenum just inside the crawl space and opposite the furnace return air opening. This plenum was connected by a tapered duct to the return opening. From one side of the box, a 12 in. diameter round duct was connected to a panned joist space that crosses the crawl space and ends at the opposite wall. To this 14 × 8 in. panned space was connected a new return opening from a 30 × 6 in. grille located at the outside wall near the front door, an opening from the dining area (utilizing an existing opening on an inside partition wall) and an opening from the living room (again, an existing opening on a side partition wall was used.)

From a second side of the return plenum, opposite the furnace connection, a 10 in. round duct was extended to another panned joist space where a new opening was cut in the floor under a bedroom window. (The return opening in this room originally had been on a partition wall. The old opening was closed and sealed.) The panned joist space ends at a retaining wall that bisects the crawl space, so an opening was made in this wall for a 7 in. round duct which ends at the opposite (front) wall. A new opening was cut into the floor below a window and a new return grille was installed.

### Supply System Enlarged

The supply system was redesigned to provide more air to the branch ducts. The plenum from the furnace was enlarged to 22 × 10 in. This plenum extends into the crawl space as far as the bisecting retaining wall. Streamlined takeoff fittings supply air to the existing 7 in. ducts delivering heated air to the inside walls of the bathroom, dining room and the two in the living room. The bedroom supply register was relocated to permit better air flow across the room to the new return grille. A new supply was installed on a partition wall to direct warm air toward the new return grill near the front door.

The seventh supply opening is located at the end of the crawl space plenum and discharges into the crawl space to offset the heat loss of that area and warm the floors in the living zone.

Air being discharged into the crawl space returns to the utility room through an opening in the foundation wall. Makeup air for the system is obtained from the utility room through a small opening in the return plenum. Air lost into the crawl space is replaced by outdoor air brought into the utility room through the new intake.

### Damper Controls Makeup Air

The outside intake is a 5 in. round duct which pierces the south utility room wall near the top. It is protected by the overhanging eave and a screen mesh cover. A quadrant damper was installed near the outlet of the duct to control the volume of combustion and makeup air. The outside air duct terminates near the gas burner's air adjustment device.

This modernization job was made during the middle of December. The new duct work was installed in the crawl space before it was necessary to turn the furnace off to replace the old supply and return ducts. The new boxes for the return system were installed after cutting the openings in the floor. Joist space was panned and brought to the point where the old return duct entered the crawl space.

### Shutdown Brief as Possible

The furnace was stopped only long enough to replace the old supply duct with the new larger duct, to connect the crawl space supply plenum and to remove the old return duct which interfered with installation of the larger supply duct.

Openings were made in the supply plenum for the living room, dining room and crawl space outlets. Next, the living room and dining room branch ducts were connected to the supply plenum. The furnace was then turned on. Air supplied in this manner was sufficient to prevent the house from becoming chilled. Air forced its way back to the furnace through the return air openings and the intake at the foundation wall.

The remaining branches were connected to the supply plenum before undertaking the work of relocating and installing new branches.

The return openings were reworked, one at a time, according to the new layout, and finally the duct section connecting the crawl space duct work to the furnace was installed.

One journeyman worked the two-day job alone. Before leaving, he cleaned the furnace heat exchanger, adjusted the fuel input, readjusted the fuel burner, reset the safety and operating controls, slowed the blower speed to match the air volume required, and cleaned the humidifier.

Installation of roofing paper in the crawl space and venting of the laundry clothes dryer were handled by the home owner and were not included in the contract.



# Installment Selling

## It Can Help Dealers Escape These Problems

- Lost Sales
- Cut Prices
- Slow Collections
- Lack of Cash
- Time Wasted
- Bad Debts

**By R. F. Coonley**  
**Assistant Treasurer**  
**Lennox Industries, Inc.**

The author adds this advice, "There are a great many dealers in this country who are still reluctant to ask their customers for a signed contract. Yet these same dealers would not give it a second thought if they were asked to sign a contract for the purchase of an automobile or a house or any other item of major importance. If there is one thing that points out a poor businessman, it is the practice of doing business on a verbal basis. In fact, the customer himself should insist on a contract because it is just as much for his protection as for the dealer's."

ANY DEALER who considers himself a good manager should be directing more and more effort today toward selling the old house market. If he is smart, he will be ready to sell this market on FHA terms or on some similar installment plan provided by a local finance company.

No longer is there the slightest stigma attached to installment selling. Of course, like anything else it can be abused. But no other form of credit has touched the lives of so many people or had more impact on the American way of life. Installment selling has probably done more to raise our standard of living than any other single factor.

We are all proud of our mass production in this country, but without a mass market there can be no mass

production. Installment selling has created this mass market. Very few average American families would have the enjoyment of their home, car, television set, refrigerator, etc., if they had needed cash to pay for them. Installment credit is one of the major economic developments of our time and is now an integral part of our business structure. No dealer ever need have the slightest hesitation in suggesting to anyone that they purchase on this basis.

### Many Fail to Use

Many readers will probably not believe that there are still a large number of dealers who fail to use profitable installment selling. However, it is a fact, as surprising as it may

## First step is to affiliate with installment company or bank . . .

seem. Perhaps the reason is that installment selling — to those who haven't tried it — seems complicated and mysterious. But is it? Let us briefly outline the procedure.

The first step is to identify or affiliate yourself with a finance company or bank handling installment loans. There are many finance companies, some local and some national, and almost every bank is glad to accept this type of business. A few manufacturers also offer such financing, but it is no doubt preferable to tie up with a local office so that the installment loans can be arranged quickly as possible.

The finance company or bank will supply its own forms, rules, and a rate chart. The rules will explain how the forms are to be used, and the rate chart will tell you how much the monthly installment payment will be, depending upon the price of the job and the number of months over which the customer wants to spread the payments. The finance company or bank will be more than willing to explain the best way to use installment sales forms. In general, all installment plans are similar in their requirements.

### Advantages Offered

Installment selling offers the small heating-cooling dealer many advantages. A few of them are:

- 1) It enables him to sell to many people who could not otherwise purchase because they do not have the total amount of necessary cash.
- 2) He collects his money as soon as the job is finished.
- 3) It eliminates collection problems leaving him more time for more profitable activities.
- 4) Prompt payment of his accounts receivable helps maintain his working capital.
- 5) It increases profit because the easier terms do not make it necessary for the dealer to cut his price.

**CREDIT APPLICATION FOR PROPERTY IMPROVEMENT LOAN**  
This application is submitted to obtain credit under the terms of Title I of the National Housing Act  
PLEASE ANSWER ALL QUESTIONS

To FIRST BANCREDIT CORPORATION Date January 2, 19 57

NET AMOUNT CREDIT REQUESTED \$ 367.00 NUMBER MONTHS 36 Have you any other application pending Yes ☐ No ☒ If yes, at this time for an FHA improvement loan? No ☒ with whom? ---

Name of applicant John Doe How long at present address? 9 years.

Address 763 N. E. Main St. Your City 10 Any State Garfield 1575

Age 38 Single ☒ Married ☐ Name of wife (or husband) Mary Age 36 Number of other dependents 2

Name and address of nearest relative not living with you B. H. Doe, 204 State St. Your City --- Any State ---

Employed by ☒ or business if self-employed ☐ Empire Dairy Co. For past 16 years.

Address 484 North Ave. Your City --- Any State --- Kind of business Dairy Products

Present salary or net income from business, \$ 425.00 per month ☐ per year ☐ Your position Supervisor Business telephone Walnut 9842

Other income (rent, \$ 45.00 per month ☐ per year ☐ Source of other income Rental

Previously employed by Whitestone Dairy Address 216 2nd St. Your City --- for 1 year.

(If applicant is a business enterprise, partnership, or corporation, submit a current financial statement.)

**FINANCIAL STATEMENT**

GIVE NAME AND ADDRESS OF YOUR BANK, AND OF FINANCE COMPANIES, OR STORES WHICH HAVE EXTENDED YOU CREDIT

1. Bank First Nat'l Bk., 4th & East Savings ☒ Checking ☐ 3. B & B Furniture Co., 506 N. 6th St.

2. Jones Finance Co., 80 So. 7th St. Loans ☐ 4. National Discount, 96 So. 7th St.

List All fixed obligations, installment accounts, mortgages, FHA (LOAN) and debts to banks, finance companies and Government agencies. Use additional sheet if necessary.

DESCRIBE DEBT	FHA INSURED	YES	NO	TO WHOM INCURRED (NAME)	DATE INCURRED	ORIGINAL AMOUNT	PRESENT BALANCE	MONTHLY PAYMENTS	AMOUNT PAID	DATE DUE
Mortgage/Contract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>First Nat'l Bank</u>	<u>1948</u>	<u>\$8,400.00</u>	<u>\$6,800.00</u>	<u>42.84</u>	<u>None</u>	<u>None</u>	<u>None</u>
Television	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>B &amp; B Furniture</u>	<u>1955</u>	<u>250.00</u>	<u>59.00</u>	<u>17.25</u>	<u>None</u>	<u>None</u>	<u>None</u>

PROPERTY TO BE IMPROVED

Address 763 N. E. Main St. Your City Bassford Any State --- Type Duplex

(Is owned by John & Mary Doe Date purchased 1948 Price paid, \$10,800.00

OR (Is being bought on contract by --- Price paid, \$ ---

OR (Is leased to --- Lease expires --- Rent per month, \$ ---

If this is a residential structure, has it been completed for three months or longer? Yes ☐ No ☒

PROCEEDS OF THIS LOAN WILL BE USED TO IMPROVE THE ABOVE DESCRIBED PROPERTY AS FOLLOWS:

Describe each improvement planned

1. Install gas conversion burner and Estimated cost \$367.00 Name and address of contractor/dealer B & W Heating Co., 872 East Ave., Your City

2. humidifier in existing furnace

3. ---

THE SELECTION OF A CONTRACTOR OR DEALER, ACCEPTANCE OF MATERIALS USED, AND WORK PERFORMED IS YOUR RESPONSIBILITY. NEITHER THE FHA NOR THE FINANCIAL INSTITUTION GUARANTEES THE MATERIAL OR WORKMANSHIP OR INSPECTS THE WORK PERFORMED.

(I/We certify that the above statements are true, accurate and complete to the best of my (our) knowledge and belief. This application shall remain the property of the lending institution to which submitted for the purpose of obtaining a loan.)

**WARNING**

Any person who knowingly makes a false statement or a misrepresentation to this application shall be subject to a fine of not more than \$5,000 or by imprisonment for not more than 5 years, or both, under provisions of the United States Criminal Code.

NOTE TO SALESMEN—If proceeds will be disbursed to the contractor/dealer, the person(s) selling the above-described improvements must sign here.

Name John Doe (Applicant) (S. S.)

Name Mary Doe (Applicant) (S. S.)

I (we) certify that I (we) am (are) the person(s) who sold this job.

Name John Doe (S. S.)

Name Mary Doe (S. S.)

(If two names and signatures are shown above)

CREDIT APPLICATION shown here is typical of those used by banks and finance companies. It should be completed after dealer's own sales agreement has been signed

**PROMISSORY NOTE**

\$ 421.97 Dated January 25, 19 57

For Value Received, W.D. promises to pay to the order of B & W Heating Co. of the main office of FIRST BANCREDIT CORPORATION, or as designated by the holder hereof.

the sum of Four Hundred Twenty-One and 97/100 Dollars

payable in 36 equal successive monthly installments of \$ 11.73 each (except the final installment, which shall be the balance then due on this note). The first installment to be paid on the 25th day of February 19 57, and subsequent installments on the same day of each month thereafter until paid in full.

Should any installment become more than 15 days past due, a late charge of \$5 for each \$100 of the installment shall be paid by the undersigned, but shall not exceed \$5.00 in respect to any one installment, if permitted by law. Upon default in the payment of any installment, the entire balance may, at the option of the holder, without demand or notice, be declared immediately due and payable, with interest at the highest lawful Contract Rate after maturity until paid.

PLEASE PRINT MAILING ADDRESS

763 N. E. Main  
(Number and Street or R. F. D.)

Your City 10 Any State ---  
(City) (State) (State)

John Doe (Signature)

Mary Doe (Signature of Wife or Husband)

**ENDORSEMENT**

Without Recourse,

B & W Heating Co.  
(Name of Lender)

Wm. Wells, Jr.  
(Signature)

PROMISSORY NOTE will be similar to this sample. Dealer will sell it to the bank or finance company with his endorsement on back

## It is amazing how many dealers have never sold on the installment plan...

6) It eliminates the so-called "cash customer" who so often waits months before making payment, and then when he does pay, deducts \$50 or \$75 to gain extra concessions.

This is an old story to many dealers. Yet it is amazing how many heating-cooling dealers have never sold on the installment plan nor do they know how to go about it. Every dealer knows how much time he spends collecting bills and how much of his own money is tied up in uncollected accounts. He knows too well how much he can be embarrassed by lack of funds. He knows, or can guess, how much ill-will he has created by pressing customers for payment.

All of this can be eliminated by installment selling. When the installation is completed and the certificate of completion is signed, the dealer has his money and his responsibility ceases as long as the installation is not defective.

### Making Typical Sale

Let us take a typical installment sale made on FHA terms and see what forms are required. Dealer X has sold his customer on installing a new heating system in his home. The customer has indicated that he would like to pay on a monthly basis. During the sales presentation the dealer has emphasized the cost per month rather than the total cost. The customer was encouraged to buy because he knew he could afford the low monthly payment.

Now that the deal is set, three forms must be completed. First, there is the dealer's contract which will outline what the job involves, the total cost, the down payment if any, the amount to be financed, the financing charge, and the number and amount of the monthly payments. This contract is signed by both the husband and wife as well as by the dealer.

Second, there is the installment

**COMPLETION CERTIFICATE FOR PROPERTY IMPROVEMENT LOAN**  
 (UNDER FHA TITLE I)  
 (WORK DONE OR MATERIALS DELIVERED)

NO 1170

To: FIRST SANCREDIT CORPORATION of Saint Paul, Minnesota  
 In accordance with my last Credit Application dated January 2, 1957, for a loan pursuant to the provisions of Title I of the National Housing Act.

I (we) certify that I (we) have not been given or promised a cash payment or rebate nor has it been represented to me (us) that I (we) will receive a cash bonus or commission on future sales as an inducement for the consummation of this transaction. I (we) understand that the selection of the dealer and the acceptance of the materials used and the work performed is my (our) responsibility and that neither the FHA nor the financial institution guarantees the material or workmanship or inspects the work performed.

**CHECK HERE IF LOAN IS TO PAY FOR COST OF MATERIALS AND INSTALLATION.**  
☒ I (We) hereby certify that all articles and materials have been furnished and installed and the work satisfactorily completed on premises indicated in my (our) Credit Application.

**CHECK HERE IF LOAN COVERS ONLY THE PURCHASE OF MATERIALS.**  
☐ I (We) hereby acknowledge receipt in satisfactory condition of the materials described in my (our) Credit Application.

**NOTICE TO BORROWER**

DO NOT SIGN this certificate until you are satisfied that the dealer has carried out his obligations to you and that the work or the materials have been satisfactorily completed or delivered.

Date: January 25, 1957

Borrower Signature: John Doe (READ BEFORE SIGNING)

Borrower Signature: Mary Doe (READ BEFORE SIGNING)

---

For the purpose of inducing the payment of proceeds of this loan and the insurance thereof by the FHA the undersigned certifies and warrants that:

(1) The above work or materials constitute the entire consideration for which this loan is made (2) A copy of the contract or sales agreement has been delivered to the borrower and the above financial institution (3) This contract contains the whole agreement with the borrower (4) The borrower has not been given or promised a cash payment or rebate nor has it been represented to the borrower that he will receive a cash bonus or commission on future sales as an inducement for the consummation of this transaction (5) The work has been satisfactorily completed or materials delivered (6) The above certificate was signed by the borrower after such completion or delivery (7) The signatures herein and on the note are genuine (8) All bills for labor or materials have been or will be paid.

If any of the above representations prove incorrect, the undersigned agrees to promptly reimburse the note from the financial institution or from the FHA as the case may be.

Date: January 25, 1957

B & W Heating Co.

**DEALER SIGN HERE**

By: Wm. Wells (Signature)

**WARNING:** Any person who knowingly makes a false statement or a misrepresentation in this certificate shall be subject to a fine of not more than \$5,000 or to imprisonment for not more than 2 years, or both, under provisions of the United States Criminal Code.

COMPLETION CERTIFICATE is filled out by customer and dealer after work is completed to the customer's satisfaction. When signed, dealer can obtain money

note which has been made out with the use of the rate chart. This is also signed by the husband and wife.

Third, there is the credit application form which the dealer asks his customers to fill out and sign. This provides the finance company with sufficient information so that they can decide whether or not the customer is entitled to credit.

### Credit Checked Quickly

These three papers are then submitted to the finance company by the dealer. Using the information on the application blank and their own credit investigation, they will tell the dealer, usually in a matter of hours, whether or not credit can be extended. When accepted, the installation can be started.

On completion of the installation, a fourth form called a certificate of completion is signed by the customer. As soon as this form is submitted to the finance company, the dealer receives his check in full for this job. He is now out of the picture as far as collecting for his work is

concerned. He is able to take advantage of discounts offered by his supplier on the materials used on the job, and his profit is actually his in the form of cash.

### Fears Are Groundless

The usual question asked by dealers who are reluctant to use installment financing is "What if the credit application is turned down after I have gone to all of the effort of landing the order?" In that case, if the customer's credit was not worthy of an installment sale, it certainly was not worthy of a cash sale or any other terms. It would be better to lose this job than to complete it and let it remain on the books unpaid month after month. The dealer need never be ashamed to offer installment terms or to have a customer go through a credit investigation. It is a modern and accepted way of doing business.

The heating-cooling dealer who offers installment terms will be in a better position to compete for his share of the consumer's dollar.



## COOLING DEALERS' HANDBOOK

How to Solve Engineering  
and Installation Problems  
in Residential Cooling

# Hot Weather Loads Put Cooling System to Test

There are still many days of peak temperature loads and the accompanying service calls. Here are some of the characteristics and trouble spots to watch carefully on all late-summer service calls

**By S. W. Reid**

**Air Conditioning Engineer  
Gilbert Associates, Inc.**

IT WOULD BE interesting to poll air conditioning dealers to see how many had service calls during July and August for which peak weather conditions were responsible. Severe temperatures put every element of the air conditioning system to the test. The cooling coil is receiving its warmest and most humid air. The com-

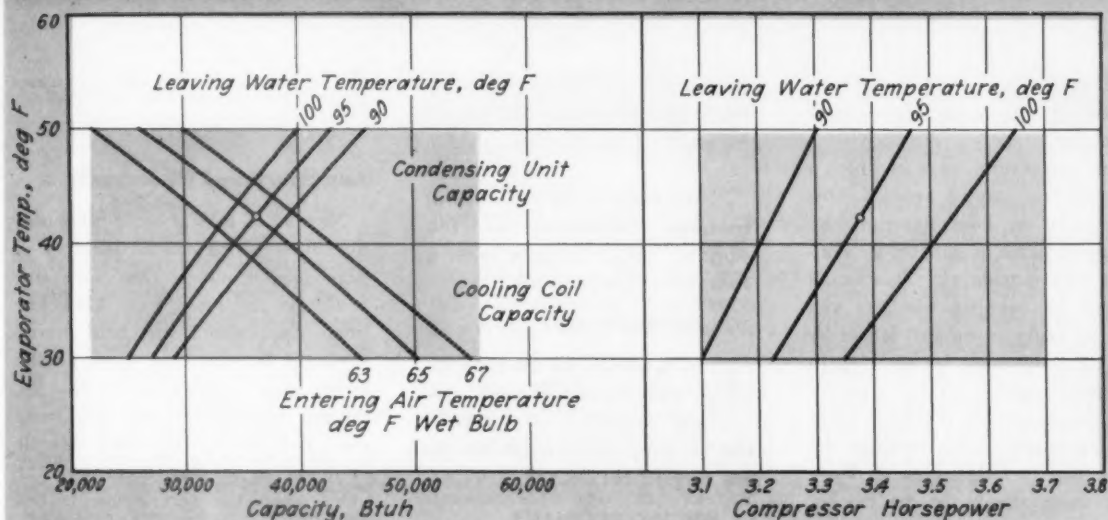
pressor is running under its highest compression ratio and for its longest continuous periods. The compressor motor is under its highest loading. The condenser and cooling tower are called on to release their greatest amount of heat. If there is any lack of proper maintenance or adjustment, it will show up during peak hot weather. Any dealer who has experienced a number of hot weather calls could profit by studying them in detail to determine if there are any common underlying factors which

can be anticipated during routine service.

### Chart Shows Load Effects

In order to understand properly what happens to a summer air conditioning system when it is heavily loaded, let us examine Fig. 1 which shows a coil-condensing unit balance and the associated horsepower requirement. This type of analysis is used by engineers to predict operating conditions of a mechanical re-





**1 IN A HEAVILY-LOADED COOLING SYSTEM, condensing unit has less capacity and requires more horsepower as temperature of water leaving the condenser rises**

frigeration system such as used for air conditioning. The condensing unit is represented by the family of lines sloping up to the right. Notice that for a given evaporator temperature, the condensing unit not only has more capacity but also requires less horsepower as the temperature of water leaving the condenser drops. At 40 F evaporator temperature for instance, capacity and horsepower are 32,000 Btuh and 3.5 respectively when the leaving water temperature is 100 F. For a leaving water temperature of 90 F the corresponding figures are 37,000 Btuh and 3.2.

For a given condensing unit, a change in the leaving water temperature will result in a corresponding change in condensing temperature (though not necessarily the same number of degrees in each case). The condensing temperature is, of course, always higher than the leaving water temperature; otherwise, heat could not flow into the water.

#### Curve Plots Balance Points

In order to determine at what evaporator temperature the condensing unit will operate when it is applied to a given cooling coil, the family of coil curves is plotted across the condensing unit rating curves as shown. The intersections of these lines with the condensing unit lines

show where the components will balance. We now have the rating system for an air conditioning unit in terms of the temperatures of the heat source (air entering the evaporator coil) and the heat sink (water leaving the condenser). For instance, if 65 F WB air is entering the cooling coil and 95 F water is leaving the condenser, the capacity will be 36,000 Btuh, the evaporator temperature will be 42.5 F and the compressor horsepower will be 3.38.

If we start with the conditions mentioned above and either raise the leaving water temperature by moving up to the left along the 65 F wet bulb line or raise the entering wet bulb temperature by sliding up to the right along the 95 F leaving water line, or if we raise both temperatures, we shall at the same time be raising the horsepower requirement. Of the two ways in which horsepower may be increased, raising the leaving water temperature (and hence the condensing temperature) has by far the greater effect.

#### Is Pull-Down Time Realistic?

With an understanding of how compressor horsepower is influenced by changes in the temperatures of the heat source and sink, we can now look into some of the practical causes for hot weather trouble.

One such cause, which perhaps may not be generally recognized, is the so-called "pull-down" interval. This is the name applied to the period between the time when a cooling unit is turned on and the time when space conditions are satisfied. Suppose, for instance, that a home owner closes his house for a week while he is on vacation. When he comes home he finds his house quite warm from being closed during hot weather. He starts his air conditioning unit which runs for a short time and then stops. The serviceman finds the motor overload relays have tripped. These are reset and no further difficulties are uncovered. On some occasions like this the owner himself may have reset the compressor starter after several trips before the serviceman was called. What causes tripout during pull-down? The answer lies in our discussion with reference to Fig. 1. When the unit was turned on, the fan began to move relatively high temperature air through the cooling coil from the over-warmed house. Under these conditions, the coil would more than likely be operating dry (no moisture being removed from the air) so the wet bulb rating curves in Fig. 1 would not apply. If a corresponding set were drawn for dry bulb operation, it would show a similar balance with the condensing unit. A high entering dry bulb temperature

would result in a high evaporator temperature and a high horsepower requirement.

There are several ways in which a pull-down trip can be avoided. One is to reduce the house interior temperature as much as possible by ventilation with outside air. This would be done by opening windows and doors, by using an exhaust fan or by using the conditioner fan to bring in 100 percent outside air for a period before the compressor is started. Once the temperature of air entering the cooling coil is reduced to 90 F or below, there should be no trouble with tripouts.

In cases where pre-cooling with outside air is not practical, the air conditioner can be kept "on the line" by reducing the amount of air passing through the cooling coil. This in effect moves the entire family of coil curves in Fig. 1 to the left. Therefore, when air at a given temperature enters the coil, the coil will balance the condensing unit at a lower evaporator temperature than when the full air quantity is used. As shown by the horsepower curves in Fig. 1, a lower evaporator temperature at a given water leaving temperature results in less horsepower. A practical way to reduce air quantity during a pull-down period is to close off some, perhaps half, of the supply registers until the rooms still served get down to reasonable temperatures.

### Find Out Operating Schedule

The type of severe pull-down load we have discussed above may be troublesome because it causes a motor tripout due to overload. Less severe pull-down loads may be troublesome because the owner does not understand them. Consider, for instance, two similar houses with like cooling systems. In house *A* the air conditioning system is allowed to run 24 hours a day under the control of its thermostat. In house *B* the owner shuts his system off from 11 p.m. when he retires until about 4:30 p.m. the following day when he gets home from work. Unless he is properly informed, the owner of house *B* may think his system is not up to par

### THIS CONTINUING SERIES OF ARTICLES COVERS . . .

**. . . all aspects of residential cooling, beginning in the August, 1952 Artisan with a complete rundown on:**

#### FUNDAMENTALS . . .

**. . . in a series of 20 articles which described the basic operating conditions of residential cooling equipment. Next, we turned to:**

#### SPECIFIC PROBLEMS . . .

**. . . of maintenance, service, installation and management, describing new techniques and presenting pointers on solving problems common to residential cooling. The current series describes:**

#### CASE HISTORIES . . .

**. . . and known problems which have actually been experienced and reported by dealers. Engineering, installing and servicing of cooling systems and their components are discussed by the author in answer to actual problems expressed by industry members.**

since his home at 6 p.m. is not as comfortable as is house *A*.

When the serviceman answers a complaint about lack of capacity and can find nothing functionally out of order, he should always question the owner about his operating schedule. Residential cooling equipment is usually sized for 24 hour operation. By this method it is possible to take advantage of the normal outdoor temperature cycle, thereby making use of the thermal or heat storage capacity of the structure and its contents to flatten the daily cooling load peak. One result of this method is that cooling equipment selected on this basis will seem to be low in capacity when its operating schedule is arranged so that no use is made of

the building's thermal storage capacity.

### Any Functional Disorders?

Now let us look at some functional difficulties which can be the root of peak load troubles. One such difficulty is the loose belt. Very few small compressors are belt driven anymore, but there are some. In the larger sizes, perhaps above 7½ hp, the belt driven machine is still being used. Belt slippage is rather difficult to detect as it may occur only at times when the serviceman is not present to measure speeds or listen for unusual sounds. It may occur only during pull-down periods when the compressor loading is highest. It may occur each time the motor starts. In any case, slippage accelerates belt wear and leads to early belt failure. Continuous operation with a slipping belt will make a noticeable difference in cooling unit capacity, since the compressor cannot do its intended job unless it operates at the proper speed.

We saw in Fig. 1 how the temperature of water leaving the condenser affects condensing temperature and horsepower. Suppose a certain cooling tower and summer air conditioning unit were selected to operate at 67 F WB air entering the cooling coil and 95 F water leaving the condenser under peak load conditions. Three factors, if neglected, can upset this balance. One is the quantity of water being circulated; another is the efficiency of the tower, and the third is the condition of the water side of the condenser tubes.

### Is Water Flow Adequate?

The water quantity, where a cooling tower is used, amounts to about 3 to 4 gpm per ton of cooling capacity. Flow can be affected by an inefficient pump, by a clogged spray nozzle, by a clogged line strainer or by circuit unbalance, if more than one condenser is served by the same tower and pump. Whatever the cause, insufficient water flow may not be noticeable until those peak load days when the resulting high condenser

pressure and horsepower requirement trip their respective protective devices.

High tower efficiency is preserved by proper tower maintenance. Air flow is maintained by proper attention to fan belt tightness, by bearing lubrication, by regular cleaning of fan blades and by attention which assures unrestricted air intake and exhaust openings. In the water circuit, spray efficiency is maintained by keeping nozzles or the water distributor functioning properly so maximum contact between air and water is maintained. A periodic cleaning of the tower pan will remove abrasive materials which are harmful to the pump. Prompt attention to rust spots will lengthen tower life.

The expression "dirty condenser" is used to describe the condition of the water side of the condenser tubes. Several types of water cooled condensers are in common use. One type employs a coil inside a shell. Water flows inside the coil and refrigerant condenses on the outside of the coil. Another type employs a continuous double tube construction in the form of a coil. Water flows inside the smaller tube and refrigerant condenses in the annular space. A third type employs a bank of double tubes arranged with headers. Each can be removed so water passages can be cleaned mechanically.

### Keep Condenser Clean

Whatever the arrangement, water cooled condenser operation depends on the flow of heat from refrigerant to water. These two media are separated by a thin tube wall of metal. When water flows over the hot surface of the tube, it has a tendency to deposit impurities that accumulate and form a hard scale which materially affects the rate at which heat flows to the water. Since the amount of tube surface is fixed, the condensing temperature rises just as it would if some of the surface were actually removed. On peak load days, a dirty condenser may force the condensing temperature high enough to cause a tripout due either to excessive pressure or to high compressor

### What Is 'Air Conditioning'?

**True air conditioning provides comfort in all seasons of the year, according to the American Society of Heating and Air - Conditioning Engineers. The ASHAE defines air conditioning as follows:**

**"Air conditioning is the process of treating air so as to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space."**

motor loading. Troubles can be avoided by checking for reasonable condensing temperatures during normal periodic service calls. If necessary, the condenser should be cleaned in accordance with good practice by the use of chemical compounds in the circulating water.

### Adjust Water Valve

There are several other hot weather trouble makers. The water regulating valve is one. It is used on units supplied with city water and is actuated by compressor discharge pressure. It serves three purposes. First, it automatically starts the flow of water whenever the compressor starts. Second, it conserves water by passing only the amount needed to maintain a pre-determined discharge pressure. Third, it automatically stops the flow of water whenever the compressor stops.

Most water regulating valves have an adjustable range and a non-adjustable differential. For a given valve, it is not possible to adjust the pressure differential from full closed to full open, but it is possible to adjust for the condensing pressure at which the valve opens. Since inlet water pressure and temperature vary from one location to another and from one season to another, it is necessary to adjust the valve for proper operation.

In the present consideration, we

are interested in hot weather troubles. If the water valve is set at one season to perform properly for a given inlet water condition, it may not necessarily perform properly in another season if there is a considerable change in the inlet water condition. In other words, a valve set for fairly high condensing pressure and cool entering water temperature in the spring may not pass enough water at the proper condensing pressure needed during the hottest part of summer. If for this reason the condensing pressure gets abnormally high, there is a possibility of a tripout of the high pressure cutout control or motor overload device. If a change in the water condition is known to take place seasonally, trouble can be forestalled by making the necessary readjustment of the water valve in advance of trouble. Whenever an adjustment is made, a check should be made to make sure that the water shuts off when the unit stops.

### Observe Protective Devices

Like the water valve, the high pressure cutout device must be properly set if nuisance tripouts are to be avoided. It should not be set too high or it will not afford its intended protection; nor should it be set so low that it will trip under peak operating conditions. A check of the tripping pressure of this device on routine service calls will overcome many difficulties.

Finally, we must consider the motor overload device which in most cases involves the proper selection of heaters for the motor starter. Nuisance tripouts may occur even where properly sized heaters are used if they are subjected to ambient temperatures higher than that for which they are rated. When recommended heaters are causing a trip for no apparent reason, high ambient might be suspected and the condition reported to the manufacturer of the equipment. He should be able to make recommendations for overcoming such a difficulty. It is risky to use oversize heaters unless it is definitely known they will provide the protection for which they are intended.

# Scrap Salvage Plan Turns

## Waste into Profit



**THIS SERIES** of articles, under the general heading, " 'TRAINING PROGRAM' ... in Print," is designed to help dealers train their engineering, service, managerial and sales personnel in all phases of their operations. These articles are selected for their informative value and are presented as reference material for developing know-how among employees in situations which are likely to arise. Some of the previous articles in this series have discussed:

- electrical problems
- humidity control
- management techniques
- air distribution
- sales presentations
- school heating
- promotion ideas
- attic fans
- selling builders
- attention to details
- installation procedures
- fume removal
- job estimating
- outside air intakes
- classroom heating

A study of the scrap problem in this shop produced a salvage and storage policy that minimizes waste and cuts inventory time



**SALVAGED PIECES** are stored according to the kind and gage of the metal. Smaller salvaged piece is held by C. A. Barnes who developed the system

WASTE prevention and reduction of scrap constitute a major challenge for sheet metal contractors. Careful handling at the layout bench can increase the number of pieces that can be cut from a sheet of metal, but it's the leftover shapes that boost the cost of raw materials.

Recently at a state meeting of sheet metal contractors, one of the speakers asked the audience for figures representing the scrap percent-

ages of their shops. About 20 contractors quoted percentages ranging from 11 to 30 percent. The average figure from the responding contractors was about 17 percent.

It must be kept in mind that the percentage of scrap accumulated by a sheet metal shop will depend a great deal on the type of operation. Production shops usually find ways to obtain maximum use of the size sheets used. However, if the shop





**HORIZONTAL STORAGE RACKS** are for long pieces of light gage metal. Vertical section at left is used for storage of stainless steel and aluminum salvage



**LONG SECTIONS** of angle, channel, rod, bar and flat stock are stored under metal welding table. Short pieces are stored vertically in wall racks



**SALVAGE RACKS** for black and galvanized heavy gage sheet metal pieces cut time in locating the piece nearest the size needed



**PLACING A SALVAGED** piece of light-weight sheet metal on storage rack is Herman C. Stith, shop superintendent, who trains the shop staff in what to salvage



**SPECIAL TIERS OF BINS** for rivets, bolts, nuts and washers save production and inventory time



specializes in custom-made products, the scrap percentage rises rapidly.

### Housekeeping Pays Off

One sheet metal shop, Metal Fabricators, Inc., Atlanta, has made a study of the scrap problem and has come up with some good answers. C. A. Barnes, president of the company and Herman C. Stith, shop superintendent, are responsible for the methods reported here.

The success of the salvage program is based on company policy of: 1) training the company's 25 shop mechanics to know what is worth saving and what should be discarded; 2) placing the salvaged sections in the proper file rack; 3) exercising good housekeeping practices throughout each day; and 4) referring to the salvage racks for small pieces when needed.

### Light, Heavy Parts Separated

Sheet metal pieces less than 3 in. wide or shorter than 12 in. in length are discarded. Galvanized, black and stainless steel as well as aluminum pieces are filed in separate bins. Heavy gage pieces are stacked in racks made from  $\frac{3}{4}$  in. iron pipe. The racks are 32 in. high and protrude 30 in. from the wall. The pipe racks are welded to  $3 \times \frac{1}{4}$  in. flat black iron bands. The bands are anchored to the concrete floor and the building wall. A 7 in. space separates the racks. Additional  $3 \times \frac{1}{4}$  in. iron bands are fastened to the wall about 8 in. apart. Three pieces

of  $3 \times \frac{1}{8}$  in. band iron are butt welded to the wall bands and fastened to the upright pipe. These three pieces of flat stock add support to the rack and provide additional separation between bins.

The black and galvanized steel salvage rack runs 20 ft along one wall. Each bin is conspicuously labeled with black figures on a white background. The labels are 6 ft above the floor and are easily identified with the related bin. (Mr. Barnes says if he had known the amount of stock salvaged would be so great, he would have located the rack nearer the layout tables and constructed it so material could be inserted from both sides.)

### Shelves Are Clearly Labeled

For long narrow lengths of light gage pieces, two tiers of shelves are used. Each shelf is clearly marked on the front support. The tallest of these shelves is 6 ft high. Above the tiers is a wooden platform where various stock is kept until needed.

Stainless steel and aluminum are stored in much the same manner as black and galvanized pieces. Due to a smaller variety of pieces and fewer pieces of leftover sections, only 5 in. space is required between vertical racks for stainless steel and aluminum pieces. Each piece of salvaged stainless steel is wrapped in paper

sheets before being stored, for protection against damage.

### Small Jobs Consume Scrap

To prevent the salvage stock pile from growing out of hand, jobs are scheduled through the shop periodically for outlet boxes, small fittings, S cleats, drive cleats and duct turning vanes. Scheduling this work through the shop accomplishes a two-fold purpose — small pieces are used (because they are easy to handle) and the shop's stock of fittings and other standard pieces is maintained at a reasonable level.

A method of salvaging small lengths of angle, channel, bar, rod and flat stock has also been worked out. The new 20 ft sections are stored beneath a steel table used for welding. This table is located near one wall. Two strips of 2 in. flat stock are securely fastened to the  $2 \times 4$  in. wall studs. One strip is 12 in. and the second is 36 in. above the floor. Fastening these 2 in. strips to the exposed edge of the  $2 \times 4$  in. studs creates a natural vertical bin, ideally sized for storage of short pieces of supporting material stock.

### Bolt Bins Maintain Supply

To accommodate an adequate supply of bolts, rivets, nuts and washers, in all sizes, a special set of bins was built. Each bin is  $8\frac{1}{2}$  in. wide, 15 in. deep and  $7\frac{1}{2}$  in. high. The lower edge protrudes beyond the shelf upon which the bin rests and is slanted upward to prevent spillage. The contents of each bin are clearly labeled on a white band across the front opening.

The bins are six tiers high. Shelf space above the bins is used for storage of occasionally-used parts and surplus supplies. The bins are in two sections of 36 bins each. The bins were made in the shop from galvanized sheet metal.

The salvage and stock control program of Metal Fabricators, Inc. has a second advantage that wasn't anticipated — inventories are much easier now that every piece of stock is readily visible.

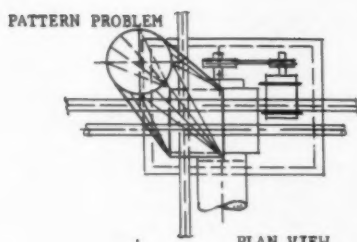
#### WHAT'S YOUR PROBLEM?

**The American Artisan's 'TRAINING PROGRAM' — IN PRINT will explain the whys and wherefores of some of the dealer's problems, tell what to do about them. You will want the members of your organization to study these articles carefully, keep them for future reference . . . If you have a problem you'd like to see covered, write Clyde M. Barnes, Editor, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.**

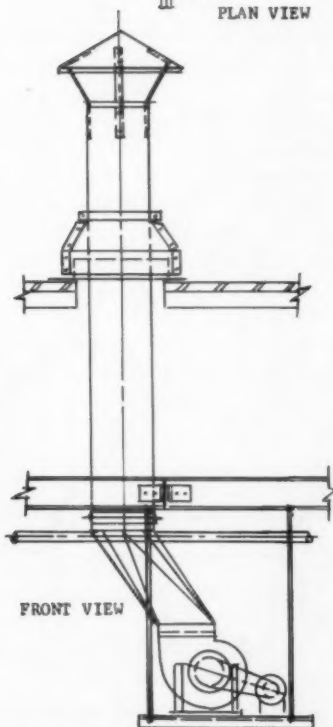
Here are details for developing a

# Double Offset Square to Round Fitting

. . . to be used where structural conditions interfere with duct system design. Certain considerations must be observed to reduce turbulence



PLAN VIEW



FRONT VIEW

1 PATTERN PROBLEM is applied at discharge side of blower in exhaust system discharge duct because of structural difficulties

STEEL FRAMING for a new building and service piping in the area of the discharge duct for an exhaust system made it necessary to design a square to round double offset fitting at the discharge side of the blower. The practical solution for the pattern problem is shown in Fig. 1.

This type of fitting should be avoided wherever possible because of the turbulence which is produced in the air stream. This adds to the total static pressure of the system.

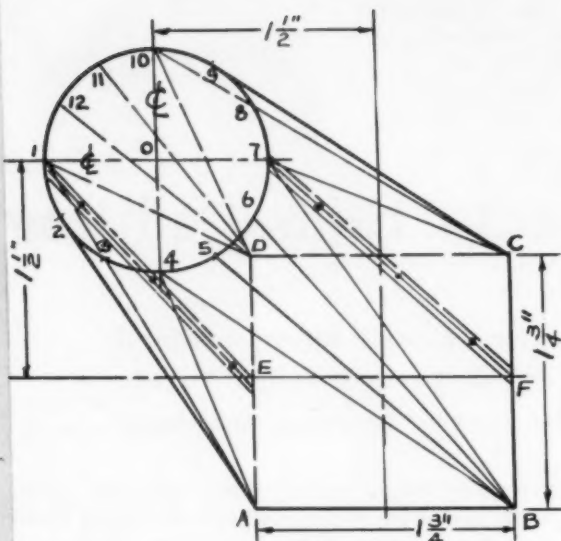
Where the fitting must be used because of field conditions, a good rule to follow is to make the square to round vertical height as long as possible and add approximately 10 percent to the area of the round stack. An increase in the stack area will decrease the velocity in feet per minute which will automatically lower the static pressure in the stack. The work required of the exhaust system is to remove fumes from the working area served by the duct system attached to the blower intake. Any decrease in air velocity on the discharge side of the blower will in no way impair the efficiency of the intake system.

Given the plan and front views of a double offset square to round fitting, the following is a step-by-step solution to the pattern problem. Note that the patterns are developed from the plan view and the  $1\frac{3}{4}$  in. height line. The front view is drawn to show the shape.

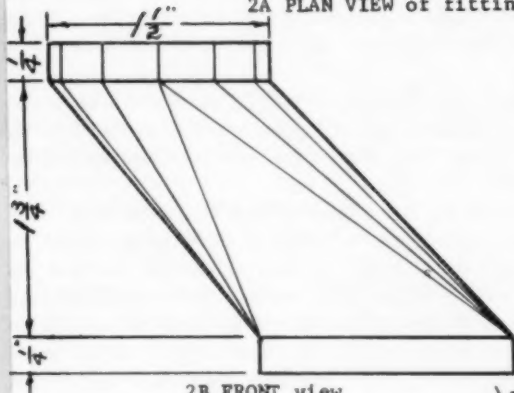
## To Construct the Plan View Drawing, Fig. 2A —

a) Draw a  $1\frac{3}{4} \times 1\frac{3}{4}$  in. square. Mark the corners A, B, C and D. From line AB measure up  $\frac{7}{8}$  in. and draw the horizontal center line. Mark the ends of this line E and F. From line BC measure  $\frac{7}{8}$  in. to the left and draw the vertical center line of the square.

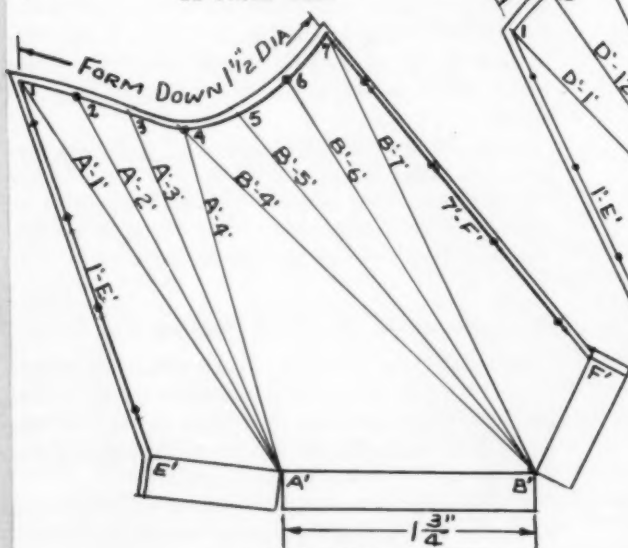
b) From the horizontal and vertical center lines of the square, measure up  $1\frac{1}{2}$  in. and over  $1\frac{1}{2}$  in. to locate the center of the  $1\frac{1}{2}$  in. round end, marked O. Draw the vertical and horizontal center lines of the round end through point O.



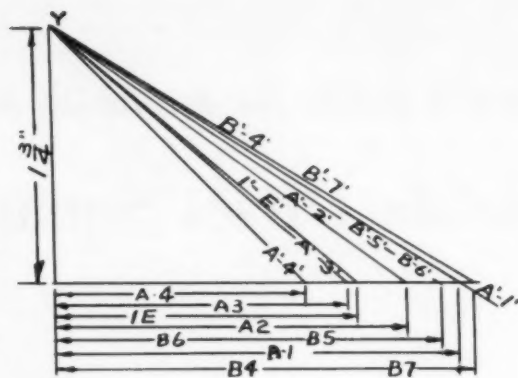
2A PLAN VIEW of fitting



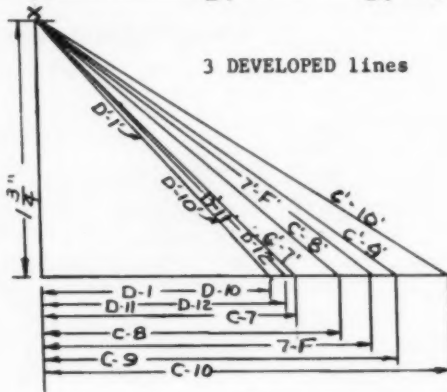
2B FRONT view



4 FRONT half pattern



3 DEVELOPED lines



5 BACK half pattern

Note: drawings have been reduced 10 percent in size for reproduction on this page



c) With point O as center and given radius  $\frac{3}{4}$  in., draw a circle. Divide the circle into 12 equal spaces and number the points 1 to 12 inclusive. From point D on the square draw lines to points 10, 11, 12 and 1 on the circle. From point C on the square draw lines to points 7, 8, 9 and 10 on the circle. Draw lines from point A on the square to points 1, 2, 3 and 4 on the circle. From point B on the square draw lines to points 4, 5, 6 and 7 on the circle.

The seams will be formed on a line between points F and 7 and points E and 1. Draw these seam lines.

#### To Lay Out the Front Half Pattern, Fig. 4 —

a) Draw a  $1\frac{3}{4}$  in. horizontal line and mark the ends A' and B'.

b) Draw a right angle. On the vertical leg measure the given  $1\frac{3}{4}$  in. height (Fig. 2B) and mark the point Y. (All developed lines are drawn to this point.) From the plan view (Fig. 2A) transfer the line A4 to the horizontal leg and draw the developed line A'4'. With A' (Fig. 4) as center and radius A'4', draw an arc above point A'. Transfer line B4 from Fig. 2A to the horizontal leg of the right angle and draw the hypotenuse line B'4'. With point B' (Fig. 4) as center and radius B'4', cut arc A'4' and mark the point 4.

c) From Fig. 2A transfer line B5 to the horizontal leg of the right angle and draw the hypotenuse line B'5'. With point B' (Fig. 4) as center and radius B'5' draw an arc to the right of point 4. With the equal space 4-5 (Fig. 2A) as radius and point 4 (Fig. 4) as center, cut arc B'5' and mark the point 5.

d) The line B6 is transferred from the plan view (Fig. 2A) to the horizontal leg of a right angle and the hypotenuse line B'6' is the developed line. With point B' (Fig. 4) as center and radius B'6' draw an arc to the right of point 5. With the equal space 5-6 (Fig. 2A) as radius and point 5 (Fig. 4) as center, cut arc B'6' and mark the point 6.

e) Transfer line B7 from Fig. 2A to the horizontal leg of a right angle and draw the hypotenuse line B'7'. With point B' (Fig. 4) as center and radius B'7' draw an arc to the right of point 6. With equal space 6-7 (Fig. 2A) as radius and point 6 (Fig. 4) as center, cut arc B'7' and mark the point 7.

f) Transfer line 7F from Fig. 2A to the horizontal leg of a right angle and draw the hypotenuse line 7'F'. With point 7 (Fig. 4) as center and radius 7'F' draw an arc to the right of point B'. With the length BF on the square end (Fig. 2A) as radius and point B' (Fig. 4) as center, cut arc 7'F' and mark the point F'.

g) From Fig. 2A, transfer the line A3 to the horizontal leg of the right angle (Fig. 3) and draw the hypotenuse line A'3'. With the hypotenuse line A'3' as radius and point A' (Fig. 4) as center, draw an arc to the left of point 4. With the equal space 4-3 (Fig. 2A) as radius and point 4 (Fig. 4) as center, cut arc A'3' and mark the point 3.

h) The line A2 is transferred from Fig. 2A to the hori-

zontal line of the right angle and the hypotenuse line A'2' is the developed line. With point A' (Fig. 4) as center and radius A'2' draw an arc to the right of point 3. With the equal space 3-2 (Fig. 2A) as radius and point 3 (Fig. 4) as center, cut arc A'2' and mark the point 2.

i) Transfer line A1 from the plan view (Fig. 2A) to the horizontal leg of the right angle and draw the hypotenuse line A'1'. With point A' (Fig. 4) as center and radius A'1', draw an arc to the left of point 2. With equal space 2-1 (Fig. 2A) as radius and point 2 (Fig. 4) as center, cut arc A'1' and mark the point 1.

j) From Fig. 2A transfer line 1E to the horizontal leg of the right angle and draw the hypotenuse line 1'E'. With point 1 (Fig. 4) as center and radius 1'E' draw an arc to the left of point A'. With line length AE on the square end (Fig. 2A) as radius and point A' (Fig. 4) as center, cut arc 1'E' and mark the point E'.

k) From lines E'A', A'B', and B'F', measure down  $\frac{1}{4}$  in. and draw flange lines parallel to and equal in length to lines E'A', A'B', and B'F'.

#### The Back Half Pattern, Fig. 5 —

a) Draw the  $1\frac{3}{4}$  in. horizontal line C'D'.

b) Draw a right angle. Transfer the given  $1\frac{3}{4}$  in. vertical height from Fig. 2B to the vertical leg and mark the point X. (All developed lines are drawn to this point.) From Fig. 2A transfer line D10 to the horizontal leg and draw the developed line D'10'. With point D' (Fig. 5) as center and radius D'10', draw an arc above point D'. Transfer line C10 from Fig. 2A to the horizontal leg of the right angle and draw the hypotenuse line C'10'. With point C' (Fig. 5) as center and radius C'10' draw an arc to cut arc D'10' and mark the intersection point 10.

c) The line C9 is transferred from Fig. 2A to the horizontal leg of the right angle and the hypotenuse line C'9' is the developed line. With point C' (Fig. 5) as center and radius C'9' draw an arc to the right of point 10. With equal space 10-9 (Fig. 2A) as radius and point 10 (Fig. 5) as center, cut arc C'9' and mark the point 9.

d) Transfer lines C8 and C7 (Fig. 2A) to the horizontal leg of the right angle and draw the hypotenuse lines C'8' and C'7' which are the developed lines. With point C' (Fig. 5) as center and radii C'8' and C'7', draw arcs to the right of point 9 in the order given. With equal space 9-8 (Fig. 2A) as radius and point 9 (Fig. 5) as center, cut arc C'8' and mark the point 8. With point 8 as center and equal space 8-7 (Fig. 2A) as radius, cut arc C'7' and mark the point 7.

e) From Fig. 2A transfer line 7F to the horizontal leg of a right angle and draw the hypotenuse line 7'F'. With point 7 (Fig. 5) as center and radius 7'F', draw an arc to the right of point C'. With length CF (Fig. 2A) as radius and point C' (Fig. 5) as center, cut arc 7'F' and mark the point F'.

f) Transfer lines D11 and D12 from Fig. 2A to the horizontal leg of a right angle and draw the hypotenuse lines D'11' and D'12'. With point D' (Fig. 5) as center

and radii D'11' and D'12', draw arcs to the left of point 10. With equal space 10-11 (Fig. 2A) as radius and point 10 (Fig. 5) as center, cut arc D'11' and mark the point 11. With point 11 as center and equal space 11-12 (Fig. 2A) as radius, cut arc D'12' and mark the point 12.

g) The line D1 is transferred from Fig. 2A to the horizontal leg of the right angle (Fig. 3) and the hypotenuse line D'1' is the developed line. With point D' (Fig. 5) as center and radius D'1' draw an arc to the left of point 12. With equal space 12-1 (Fig. 2A) as radius and point 12 (Fig. 5) as center, cut the arc D'1' and mark the point 1.

h) Transfer line 1E (Fig. 2A) to the horizontal leg of the right angle (Fig. 3) and draw the hypotenuse line 1'E'. With point 1 (Fig. 5) as center and radius 1'E',

draw an arc to the left of point D'. With line DE (Fig. 2A) as radius and point D' (Fig. 5) as center, cut arc 1'E' and mark the point E'.

i) From lines E'D', D'C' and C'F', measure down the given  $\frac{1}{4}$  in. flange length and draw the flange lines parallel to lines E'D', D'C' and C'F'.

#### To Lay Out the Collar Pattern —

a) To calculate the collar circumference, multiply the given  $1\frac{1}{2}$  in. diameter by the constant 3.14. Thus,  $1.5 \times 3.14$  equals  $4\frac{3}{4}$  in.

b) Draw a rectangle equal to the  $4\frac{3}{4}$  in. collar circumference by the given  $\frac{1}{4}$  in. length.

Add allowances for seams and joints, lay out the rivet holes and mark the patterns for fabrication.

## ARI Standard 610 Is Guide to Year 'Round System

A GUIDE to recommended practice in the design of residential year 'round air conditioning systems is available in Application Engineering Standard 610 of the Air-Conditioning and Refrigeration Institute. It outlines the minimum application standards for the design of such systems in the United States. ARI points out that these engineering standards are to be construed as recommendations rather than rules which might prevent the use of other justifiable application standards.

The calculations for design heating and cooling load as spelled out in the standard are based upon: 1) design inside conditions, 2) design outside conditions, 3) size and physical characteristics of the residence, 4) average number of occupants and other indoor sources of substantial load when design conditions prevail, 5) quantity of outside air assumed for ventilation.

The design inside conditions specified in the standard call for an inside dry bulb design temperature for heating of not lower than 70 F. Where humidification is provided, the design inside relative humidity is required to be not more than 35 percent at an outside air temperature of 30 F.

For cooling, the design inside temperature and humidity should not be higher than 80 F dry bulb and 50 percent relative humidity. The engineering standard notes that in relatively cool climates having design conditions below 90 F dry bulb and 70 F wet bulb, it is often desirable to use somewhat lower inside design conditions to provide greater comfort.

The standard outlines the procedure for making heat load calculations and selecting the correct estimating factors for most common types of construction. Where conditions or construction features differ appreciably from those described, or where a more detailed analysis of the heating load is desired, the tables and methods given in the Heating, Ventilating and Air Conditioning Guide of the American Society of Heating and Air Conditioning Engineers is used as reference data.

Procedures for making cooling load calculations are also included in the standard and an estimating form

is provided. Items considered in the calculation include: 1) heat gain through windows, 2) heat gain through walls, 3) heat gain through partitions, 4) heat gain through roofs, 5) heat gain through ceilings, 6) heat gain through floors, 7) sensible heat load from incoming outside air, 8) sensible heat gain from people occupying residence, 9) heat load from blower motor, 10) allowance for latent heat load. The ASHAE Guide is to be used when conditions vary appreciably from those recommended.

In selecting equipment, the standard requires heating and cooling capacities not less than the design heating and cooling loads. For cooling, it notes that capacity is affected by the condensing means and conditions. The equipment selected for cooling should have an application rating not less than the cooling load at the following condensing conditions:

Water cooled equipment — 1) water temperature not less than the average maximum value, as secured from the local water company or as taken from the current issue of the ASHAE Guide, 2) a wet bulb temperature not less than the design outside wet bulb temperature should be assumed for the rating and selection of cooling towers.

Equipment with evaporative condenser cooling — condenser should be selected for a wet bulb temperature not less than the design outside wet bulb temperature. Allowance should be made for higher design entering air temperature to the condenser where the location warrants (such as condensing equipment located in attics, enclosures, sun-exposed places, etc.)

Air cooled equipment — condenser design air temperature should not be less than the design outside dry bulb temperature. Allowance should be made for a higher design entering air temperature where installation conditions indicate above normal condensing air temperatures.

Copies of Standard 610 can be obtained from the ARI, 1346 Connecticut Ave., N.W., Washington 6, D.C., for 50 cents each.

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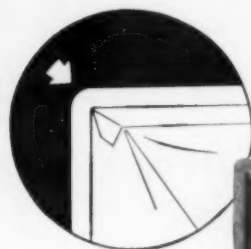
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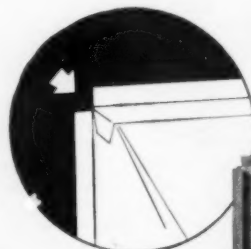
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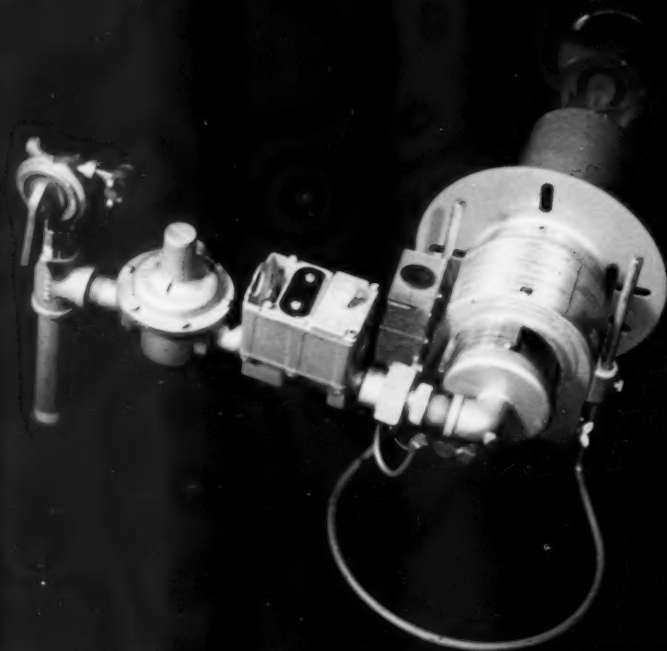


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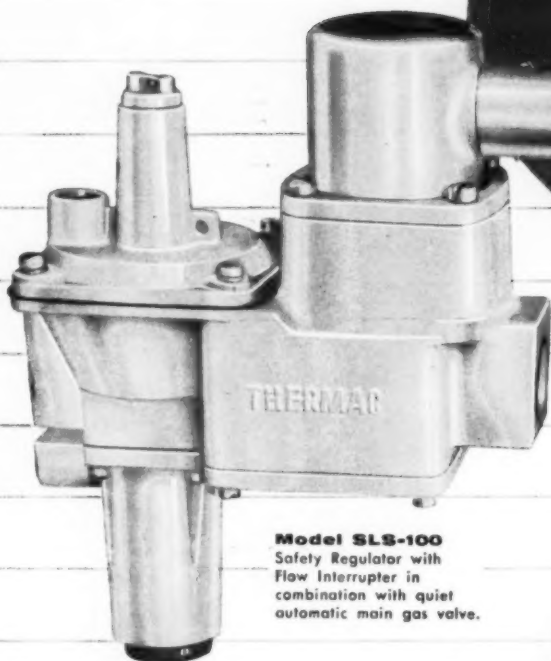
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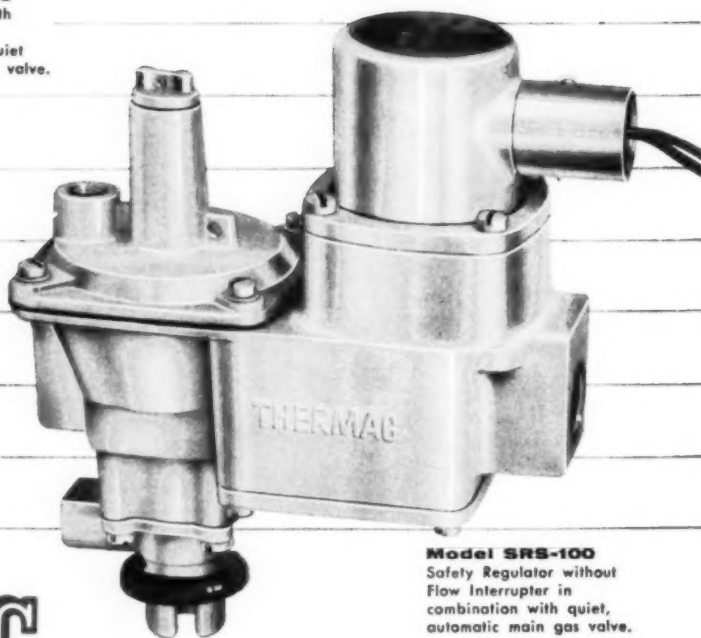
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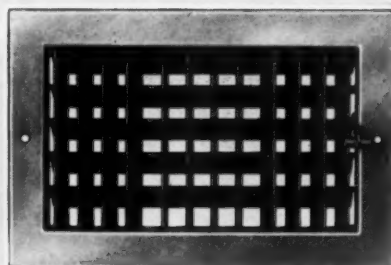
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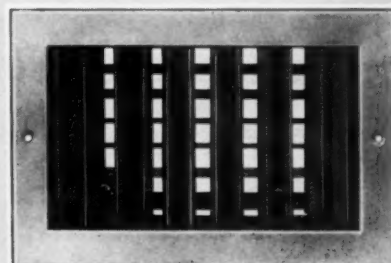
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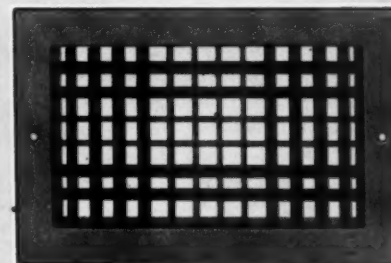
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## Idea Exchange for Dealers, Contractors

# Tandem Outlets Beat Structural Limitations

IN AN EFFORT to take advantage of the natural characteristics of warm air to rise toward the ceiling and cold air to fall toward the floor, some dealers have designed tandem openings in riser ducts supplying air to rooms. The lower opening is intended for use during winter operation and the upper opening during the summer.

The photograph reproduced here shows a tandem installation which is part of a year 'round system being installed by Robinson Furnace Co., Chicago dealer.

### Dampers Must Close Tightly

When tandem outlets are used, registers must have tightly closing dampers to prevent distortion of the air pattern designed for the room. During winter operation, the lower register damper is fully open and the upper register is fully closed. Warm air discharged out of the register will flow across the floor and gradually rise toward the ceiling with a minimum of air motion caused by the low discharge air velocity. After one winter of operation no cold floors nor stratification of warm air near the ceiling were reported.

During the summer the lower register damper is closed and the upper register is open. Cool air is discharged across the room, above occupants' heads, and gradually settles toward the floor, resulting in an even

mixture of room air throughout the occupied zone. After two summers' use of the cooling system, the occupants are very satisfied.

One disadvantage of this type of system is the responsibility that must be placed upon the home owner. Should he fail to change the damper arrangements each season, he will fail to obtain the results the system has been designed to produce. In this particular installation, the customer has an annual service and inspection contract whereby the changeovers are performed by the serviceman who calls at the beginning of the cooling season to check the refrigeration equipment before putting the cooling system into operation and later on in the fall for an annual inspection of the heating equipment. The changeover of the register dampers is listed on the work order so the serviceman will not overlook readjustment of the air flow.

### Overcome Structural Problems

Tandem outlets may grow in use where because of structural difficulties standard perimeter outlets are impractical. An ideal location for tandem outlets is in second floor rooms where perimeter outlets cannot be used because of building limitations. Another use is in bathrooms where fixtures interfere with outside wall locations. Tandem outlets may be located in any of the partition



**TANDEM OUTLETS** provide year 'round comfort from strategic location in basement room without imbedded ducts. Partition wall will cover riser duct

walls where air would not be directed toward persons stepping from a bath tub or shower compartment.

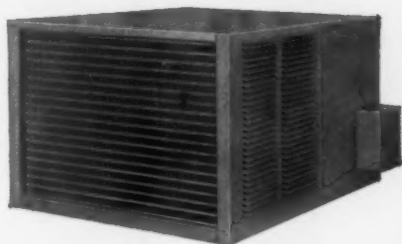
Where basement floors do not contain ducts, tandem outlets can introduce conditioned air at the points from which best air distribution throughout the recreation room can be obtained. Tandem outlets are a poor second choice however, if ducts imbedded in the floor can achieve the desired heating results. Tests have shown that cooling basement rooms is far less a problem than heating those areas.



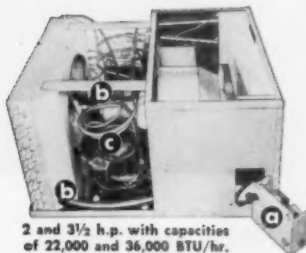
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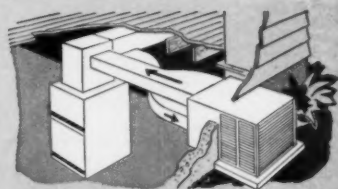
COUNTERFLOS



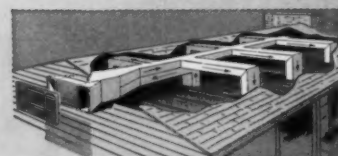
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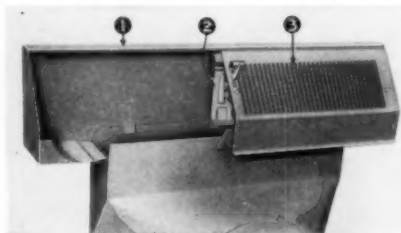


Here's proof the "*Perfusaire*" produces air pattern required for true perimeter heating and cooling

No other perimeter diffuser matches the perfect air pattern of Auer's "Perfusaire". Shown above is an actual laboratory smoke test... It proves that because of Auer's exclusive design featuring scientifically angled diffuser blades it produces an ideal perimeter, fan-shaped air pattern.

"Perfusaire" out-performs all other perimeter registers because wall surfaces are evenly and completely blanketed. There are no hot spots... no cold spots, that result in drafty, uncomfortable and uneven air distribution. The efficiency of the entire heating or cooling system is dependent on the performance of the diffuser and the distribution of air as determined by the angle of the deflector fins.

Only the Auer "Perfusaire" provides the engineered accuracy and system dependability required for *true perimeter* heating and cooling. Insist on the Auer "Perfusaire" for fast, easy installations... satisfied customers... greater profits. For further information, contact your nearest Auer jobber... or write us direct.



### "PERFUSAIRE" FEATURES

1. "Perfusaire" is only 18" long but has the capacity of 4 to 8 foot units... installs easily in new or old construction in or against wall or base-board... cuts installation time up to 50%.
2. "Perfusaire" is a complete unit equipped with Auer's patented balancing damper... no accessories to buy... requires no stackhead.
3. Angle of deflector fins scientifically determined to produce perfect perimeter heating and cooling pattern.



## THE AUER REGISTER COMPANY

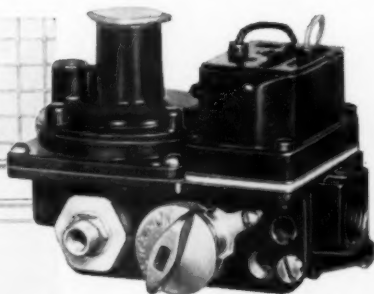
"REGISTERS AND GRILLES FOR EVERY HEATING AND COOLING NEED"

6602 CLEMENT AVENUE • CLEVELAND 5, OHIO

In Canada: Superway Products, Tilbury, Ontario • In Europe: Auer Continental, 20 Oyster, Antwerp, Belgium

LAST WORD FROM  first name in quality controls

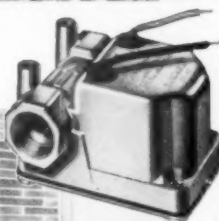
# NOW! A KEY LINE OF GAS CONTROLS



## NEW!

Series 5010 gas control for clothes dryers, wall heaters, space heaters, trailer heaters.

New compactness never before possible! The automatic gas control that fits where others can't. Available with magnetic operator . . . pressure regulator is optional. Straight-thru (side or bottom) outlets. Built-in "A" and "B" cocks or flow interrupter, safe lighting, 100% safe shut-off. Complete kit also includes — choice of two thermostats, transformer, wire and staples. Ask for descriptive bulletin.



## NEW!

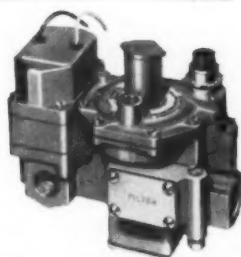
Series 5030 normally open electro-magnetic gas "Oven-Tender" control for clock-controlled ovens.

Smaller than any in the field — no bigger across than a fine watch. Quieter than conventional solenoid. Silent snap action. Mounts in any position. Variety of inlets and outlets for pipe or tubing. For all gases. Write for descriptive bulletin.

Never before have gas appliance manufacturers been offered such a line as this: 4 gas controls so versatile in application — so compactly engineered — they out-mode all others in the field.

To gas appliance dealers this means more built-in competitive advantages — on a broader range of products than ever before! You sell truly automatic control — plus a number of sales-clinching thermostatic accessories perfected by extensive research of Controls Company of America.

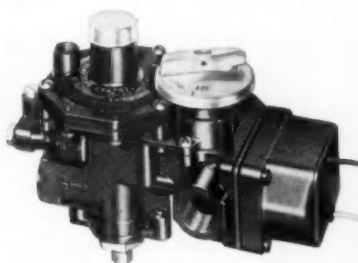
You sell easier lighting, operation and shut-off . . . and A-P's single-source responsibility backs every control sold.



## NEW!

Series 5250 gas furnace control — also best for unit heaters. Complete with electro-magnetic operator.

Features a flow interrupter for summer shutdown. Has built-in pressure regulator — available for use with LP gas. Easy conversion without breaking pipe connections. Assures 100% safe shut-off . . . safe lighting. Choice of outlets. Write for bulletin.

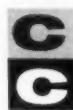


## VERSATILE!

"55" gas control . . . four interchangeable

thermostats for any heating need. Electric and non-electric types. Magnetic operator (as above), electric thermostat, modulating and modulating-snap thermostats. Best for space heaters, small furnaces, unit heaters. AGA, UL and CSA listed.

CONTROLS COMPANY OF AMERICA



Manufacturers of A-P CONTROLS

2452 N. 32nd Street, Milwaukee 10, Wis.

Controls That Make Modern Living Possible





## SIX-GOAL MAN FAILS TO FLAKE TI-CO®



*Captain Pat Conners, six-goal man and Captain of one of the Midwest's top polo teams, the Shamrocks, examines dented, but unflaked sheet of TI-CO after his repeated drives of a polo ball driven into it at 85 mph.*

Not many applications require TI-CO coating to withstand punishment equal to the 85 mph slam of a polo ball. But, you can see how this unusual test does demonstrate the ability of TI-CO to take the toughest sheetmetal shop fabricating operations . . . crimping, lock-seaming, brake forming . . . without cracking or flaking of the

zinc coating.

TI-CO's secret is in the patented Sendzimir process which produces a flexible galvanized sheet with a tightly adhering zinc coating that flows with the base metal as it is being fabricated. Non-flaking TI-CO eliminates costly down time and clogging of machines.



## 8 reasons why Inland TI-CO Galvanized Sheets are best for every sheet metal job



### **TI-CO won't flake—**

Test after test proves that the zinc coating on TI-CO galvanized sheets will not flake off. They take tough 180° bends in stride and the coating stays put. Re-runs of ductwork made necessary by coating failure are eliminated.



### **TI-CO sheets are easy to fabricate—**

Any forming operation that can be done with cold rolled steel can be accomplished with Inland TI-CO. TI-CO performs beautifully in the Pittsburgh lockseamer and the coating stays put! TI-CO eliminates machine down time caused by zinc clogging.



### **TI-CO sheets last longer—**

There are no "call backs" due to rusting of the ductwork when you use TI-CO. Even after the toughest forming operations, TI-CO's zinc holds on tight to protect installations and increase the service-life of even the parts which may be exposed to snow, ice, rain or salty atmosphere.



### **TI-CO sheets are uniform—**

Modern manufacturing methods employed in the production of TI-CO sheets insure uniform quality, gage and coating thickness.



### **TI-CO sheets won't burn—**

Ductwork made from TI-CO galvanized steel sheets will not burn, providing an excellent barrier to the spreading of fire.



### **TI-CO sheets are easy to solder and weld—**

Once the operation is set up, soldering or welding Inland TI-CO is easier and faster. TI-CO's uniform coating eliminates the constant adjustment of welding equipment that is often necessary with ordinary galvanized sheets.



### **TI-CO sheets are strong and durable—**

Hammering down a Pittsburgh lock-seam proves both base metal strength, and TI-CO's ability to withstand the toughest forming operations without flaking, cracking or peeling.



### **TI-CO sheets make quiet ductwork—**

TI-CO has a low Coefficient of Linear Thermal Expansion. This means it expands less under heat and contracts less when cooling than other metals commonly used for this purpose.

If you are not already doing so, it will pay you to specify Inland TI-CO galvanized sheets for all of your sheet metal requirements. Always look for the TI-CO brand on your sheets.

TI-CO is available in cut sheets or coils, in gages 8 to 30 inclusive and widths as great as 60 inches. TI-CO comes with dry, oiled or chemically treated surfaces. Consult your local steel distributor or Inland representative for your requirements.

**TI-CO Galvanized Sheets are now readily available!** The terrific demand for this high quality sheet has kept TI-CO in short supply since its development. Now, additional production facilities have been completed, making greater quantities available.

Write today for a free informative booklet on TI-CO to:

### **INLAND STEEL COMPANY**

38 South Dearborn Street • Chicago 3, Illinois  
Sales Offices: Chicago • Milwaukee • St. Paul • Davenport  
St. Louis • Kansas City • Indianapolis • Detroit • New York



look for this brand—  
your assurance of  
non-flaking performance

# Installation Contracts May Waive Liability

**Courts hold that dealer may include clause in contracts to hold himself not liable for damages due to negligence. Risks would be shifted from one party to another in same manner as with insurance**

LIABILITY for damages that may occur in the installation of air conditioning or warm air heating equipment is frequently imposed by the courts on the dealer. However liabilities of this sort, which are otherwise imposed upon the dealer, may by agreement be assumed by the owner or be waived altogether.

A controversy before the United States Court of Appeals in the Middle West involved an agreement of this character which stated that the dealer "shall not be liable or responsible for any loss, damage or injury resulting from the use of such equipment or for the acts of any person engaged in doing such work."

When suit was brought by the owner for damages which he contended had been incurred through the negligence of the contractor, this clause was set up as a defense. The court sustained the defense and held that by virtue of this stipulation no liability could be imposed on the dealer. The Federal appellate court said, "There is no public policy which forbids parties as between themselves from contracting against liability."

### Warranty Involved

Only a few months before, another case involving a similar provision was before the Federal courts in an eastern state. A warranty by a manufacturer declared that a piece of equipment was "free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory

any part or parts thereof."

After this statement appeared the following clause: "This warranty being expressly in lieu of all other warranties express or implied and of all other obligations or liabilities on our part."

This clause was interposed as a defense against an action by a purchaser for damages which he claimed were due to the negligence of the manufacturer. Of this defense the Federal court said, "The general rule is that one party to a transaction may ordinarily contract to limit or eliminate his liability for negligence in performing his obligations. There is no rule of public policy which makes such provisions ineffectual, particularly when the other party is under no disadvantage by reason of confidential relationship, disability, inexperience or the necessities of the situation."

### Contract Shifts Liability

The principle of law governing provisions such as this in sales and installation contracts was set out recently in the decision of another similar suit. The contract stated, "Purchaser agrees to indemnify and hold contractor harmless for damage or destruction unless such loss, damage or destruction results from wilful misconduct or failure to exercise good faith on the part of the contractor or contractors' representatives having supervision or direction of the operation of the whole of the contractor's business."

This stipulation, it was contended by the purchaser, was not enforce-

able, claiming that the law did not permit a person to contract against liability for his own negligence. "We recognize," said the court, "the applicability of the doctrine involving the negligence of common carriers, public utilities, parking lot operators, innkeepers and others who are dealing with the general public and whose business is affected with a public interest."

### Compared with Insurance

"In the instant case there is no public policy that strikes down the save-harmless bargaining between the parties which is binding on them and their privies. That one should save the other harmless from simple negligence is no more against public policy in this instance than an indemnity clause in an insurance policy would be."

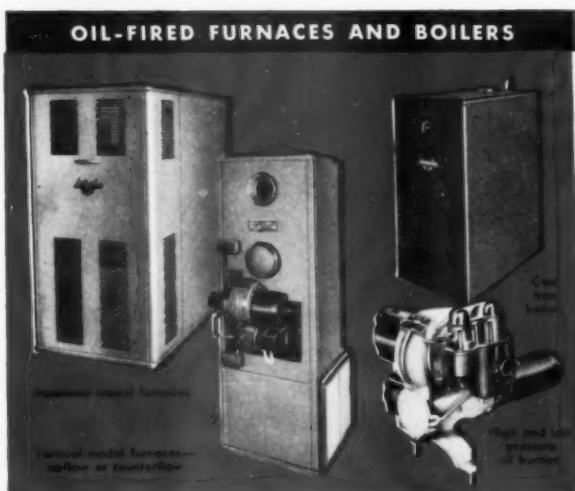
"The parties simply agree between themselves that a well known industrial risk should be borne by the one who was paying the cost. Insurance policies often indemnify assureds against their own negligence. By reason of the hold-harmless clause the contractor accomplished the same result in this case."

This rule of law was summarized recently by a United States District Court. "A bargain for exemption from liability for the consequences of negligence, not falling greatly below the standard established by law for the protection of others against unreasonable risk of harm, is legal except: (a) If the parties are employer and employee and the bargain relates to negligent injury of the employee in the course of his employment. (b) When one of the parties is charged with a duty of public service and the bargain relates to negligence in the performance of any part of its duty to the public for which it has received or been promised compensation."

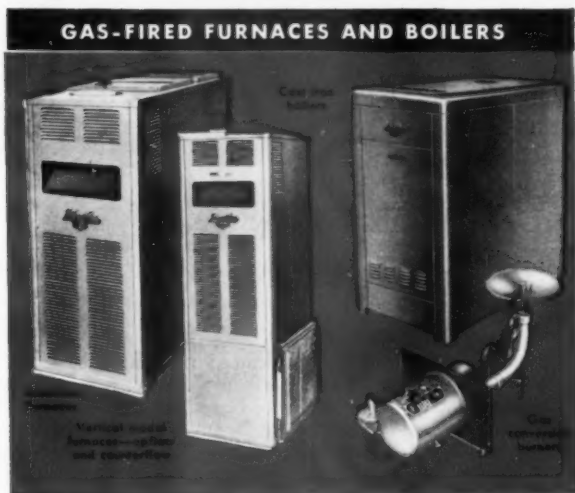
Reasons why a  
**SW** Dealership is  
 worth more to you

# STEWART-WARNER *Winkler*

## OIL-FIRED FURNACES AND BOILERS



## GAS-FIRED FURNACES AND BOILERS



Stewart-Walker-  
 Winkler  
 representatives  
 cover the nation

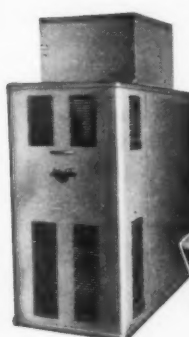
In seven ways Stewart-Walker-Winkler provides a sound foundation on which you can build a bigger, more profitable business:

- 1. Outstanding product**... engineered to the highest standards of an organization famous for quality manufacturing.
- 2. A complete line of product**... satisfies every home heating or cooling requirement.
- 3. A comprehensive assortment of selling helps**... literature, displays, demonstration material.
- 4. Cooperative advertising plan**... enables you to conduct a continuous, resultful selling program.
- 5. Selling help by factory experts**... District Sales Managers cover the country, always available to help on sales and installation problems.
- 6. Training Institute**... free selling and engineering courses for dealers and personnel.
- 7. National advertising**... appearing in shelter group magazines.

These are the reasons why a Stewart-Walker-Winkler Dealership is a growing and enduring asset for men who take advantage of its many profit-making features.

## HEATING-COOLING CONDITIONERS

Furnaces are available as complete summer-winter air conditioners, equipped with Evaporator Cooling Coil and outdoor Condensing Unit. Or, if originally installed with an empty Evaporator casing, the Evaporator and Condenser can be added later at minimum expense.



Basement model with  
 Evaporator Cooling Coil



Air and water cooled  
 Condensing Unit



Free-standing  
 store cooling  
 unit

## FREE DEALER TRAINING

Stewart-Walker-Winkler backs up *quality of product* with thorough training in *productive salesmanship*! At the Training Institute, ingenious "visualizers" and expert instructors take all the mystery out of air conditioning—show you how to sell Stewart-Walker-Winkler Products and install them for maximum customer satisfaction.

Write, wire or call today for complete information



# STEWART-WARNER CORPORATION

HEATING AND AIR CONDITIONING DIVISION • Dept. A-97, LEBANON, INDIANA

# Electro-Klean performance.....



## Distributor Bryant-Williams praises Company Performance

"When AAF showed us its new product—*Electro-Klean* Electronic Home Air Filter—and a complete plan for opening the Pittsburgh market, we were interested. But we also wanted to be *shown*. Would the company follow through with every phase of its proposed campaign? Well, listen to this.

"From kickoff dealer meetings to large-scale color newspaper advertising and the full-time services of a top publicity expert, AAF's master promotion plan was followed through to the letter! No momentary splash, this, but a lot of sound thinking backed up by concentrated *action*. It sure was a real pleasure to work with a company that performed 100% on its promises."

Lee Williams  
Bryant-Williams Company  
936 Ridge Avenue  
Pittsburgh 12, Pennsylvania



## Dealer D. E. Hickey praises Sales Performance

"We were impressed with *Electro-Klean's* sales features from the moment it was introduced at AAF's first dealer meeting here. We liked the ads, too, and a program that made a lot of sense. Another big point that sold us—the many ease-of-installation features. No special wiring. No water or sewer connections. No moving parts to wear out. Advancements like that make *our* selling job easier.

"The fact that we could realize a full profit on every sale was the clincher. *Electro-Klean's* price makes that possible.

"In fact, the sales story was so convincing I now have one in my own home!"

D. E. Hickey  
D. E. Hickey Company  
8157 Bennet Street  
Pittsburgh 21, Pennsylvania  
(Mr. Hickey is President of the Heating and Air Conditioning Contractors Assn. of Pittsburgh.)

*Built and Backed by American Air Filter Company, Inc.*



# tops expectations in Pittsburgh



## Mrs. Robert L. Patterson praises **Product Performance**

"Whoever heard of a home 'that house-cleans itself'? Both my husband and I were willing to be shown. You see, white is the dominant color theme in our home . . . but oh, what a problem to keep clean!

"Now, however, we can already notice the difference with our new *Electro-Klean* Home Air Filter. Our walls and woodwork stay clean. Draperies, too, retain their fresh, new look. Of course, there hasn't been time to see if *Electro-Klean* does *everything* claimed for it, but its marvelous performance so far has more than satisfied us."

Mrs. Robert L. Patterson  
612 Berkshire Drive  
Fox Chapel  
Pittsburgh,  
Pennsylvania

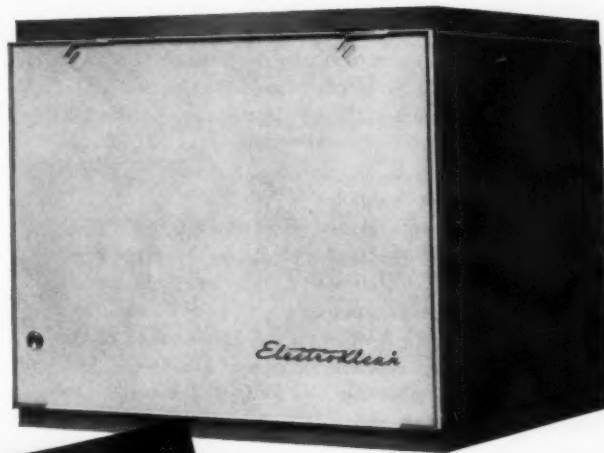
Let *Electro-Klean* Electronic Home Air Filter open a new field of profit for you. Take advantage of this new way to lift a sale out of competition. Priced at just *one-half* that of comparable units, *Electro-Klean* makes every home a prospect for electronic air filtration. No longer do you have to cut price. Instead, you take a *full* profit on every unit!

Discover what AAF performance *really* means . . . right from promotional support to a dependable product that eliminates after-service problems and complaints. Remember, every *Electro-Klean* unit is *fully* guaranteed.

See your distributor today. If he doesn't know the *new Electro-Klean* story, write: *Electro-Klean* Dept., American Air Filter Company, Inc., 355 Central Ave., Louisville 8, Ky.

## *Tired of swapping dollars?*

Ask your distributor about the new low-priced *Electro-Klean* . . . There's nothing like it on the market!



NEW MODEL  
NEW LOW PRICE

# *Electro-Klean*

ELECTRONIC HOME AIR FILTER

.. *World's Largest Manufacturer of Electronic Air Filters*

# WHAT THE ASSOCIATIONS ARE DOING

## Georgia Summer Meeting Provides Information and Fun for All



NEW PRESIDENT Aaron Newman (left) chats with retiring president L. D. Herndon and Charles W. Bryan, Jr., the new vice president (right)

THE ANNUAL summer vacation and election convention of the Sheet Metal, Roofing, Heating, Air Conditioning Contractors' Association of Georgia was held at the General Oglethorpe Hotel, Savannah, July 18-20. Designed to provide an opportunity for fun and relaxation as well as important business meetings, the convention featured an ice show as well as a practical sales tax forum.

Aaron Newman, Savannah, was elected president for the coming year. Other officers elected were Charles W. Bryan, Jr., Macon, vice president, and James H. Welch, Valdosta, treasurer. L. D. Herndon, Columbus, retiring president, will serve ex officio.

The following were elected as directors: Harry Williams, Moultrie; W. A. Strickland, Atlanta; George Brasington, Augusta; L. J. Loiselle, Columbus; B. F. Simon, Valdosta; W. H. Dunlap, Macon.

President Newman announced the appointment of the following standing committee chairmen: Finance — Jack West, Macon; Membership — Wendell Townsend, Atlanta; Supplier Relations — J. D. Knox, Atlanta; Labor Relations — I. M. Kelly, Jr., Augusta; Legislative — John R. Tufts, Atlanta; Parliamentary — Henry W. McDowell, Savannah.

The president also appointed the following to the governing board as directors at large: W. M. Jones, Augusta; I. C. Mock, Augusta; K. F. Dunlap, Jr., Macon; Leroy Still, Atlanta.

Appointed to head the unattached suppliers advisory committee were E. L. Murphey, Atlanta, chairman, and J. B. Wallis, Jacksonville, Fla., co-chairman.

The business session included a discussion of heating and air conditioning trade features by Corwin Robertson, Atlanta district manager, Carrier Corp., assisted by Ed

Eckles, general manager, Mingledorf's Inc., Savannah, and Jack Crowley, Charter Distributors, Atlanta. A talk on Aluminum and How It Will Affect the Sheet Metal Contractors of the Future was presented by Howard Martin and Jack West of the Aluminum Company of America. A sales tax forum was presented by H. M. Sewell, Sales and Use Tax Div., Georgia Department of Revenue.

An unusual feature of the convention was an ice show at the Savannah Sports Arena featuring professional skating stars. After the show, skating was open to all with instructors available.

### Indoor Climate Design Institute Held

A TWO DAY Indoor Climate Design Institute was held on the campus of the University of California at Los Angeles Sept. 12-13 under the sponsorship of the University's School of Engineering and the Institute of Heating and Air Conditioning Industries.

The keynote speaker was Dean L. M. K. Boelter of the engineering school who talked on "Man's Efforts to Control His Environment." L. P. Herrington of Yale University spoke on "The Human Requirements for the Ideal Indoor Climate." Professor Fred A. Bryan, UCLA School of Medicine, discussed the "Medical Significance of Air Contamination." John E. Haines, past president of the American Society of Heating and Air Conditioning Engineers, talked on the "Economics of Year 'Round Air Conditioning."

Southern California home economics editors participated in a round table on "Indoor Climate Design for Family Living." Mrs. Ramona Deitemeyer, Lincoln, Neb., Mrs. America of 1956, served as speaker-moderator. Another panel under the direction of Dean Boelter discussed the indoor climate of the future.

### Plan New York Oil Heat Promotion

A PROGRAM promoting the use of oil heat in the metropolitan New York area is being launched as a combined activity of the Oil-Heat Institute of Long Island, New York Oil Heating Association, Bronx Oil Trade Association, Westchester Oil Trade Association, Oil Heat Council of New Jersey and the Better Heat with Oil Council. A \$50,000 budget has been provided by these groups to inaugurate a 13 week radio and television program in the New York area starting this fall.

(More association news on page 96)

*No service call tonight...*



## ROBERTSHAW DEPENDABILITY

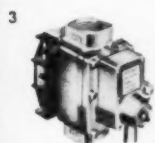
*stands guard at 4 vital  
central heating points!*



**WALL THERMOSTATS TR series**... "fashion-right at home" in any decor, detachable ring for painting... easy-to-read double dial eliminates squinting. Snap-action switch is completely enclosed to seal out foreign particles. Features adjustable heat anticipation. Requires no leveling to install! DT series... low cost, yet highly reliable. Attractive bronze finish, fixed heat anticipation.



**COMBINATION FAN & LIMIT (FAL 40D)** Compact, easy-to-install... fan and limit terminals separated to allow extra space for quicker, easier wiring. Limit switch features gold-plated contacts for positive operation, may be used to control line, low voltage or millivolt circuits. Fan and limit control settings adjustable, approx. 20° fixed limit differential.



**MODEL HC-E** A new, hi-capacity gas heating control, actually 2 controls in one... automatic pilot with thermo-magnetic, 100% gas shut-off, built-in pilot filter and adjustment and a SILENT, positive, snap-action gas valve... includes limit switch terminals.



**#9 PILOT AND NEW SUPER-CLAD THERMO-COUPLE** An unbeatable combination for positive, safe operation. #9 Pilot features flame-retaining double hood to provide improved main burner ignition. New Robertshaw-Grayson Super-Clad Thermocouple generates greater electrical output... eliminates service calls caused by needless outages — yet costs no more!

*To discover exactly how and why dependable Robertshaw Central Heating Controls can save costly service calls... protect profits... contact your Robertshaw-Grayson representative today!*

A COMPLETE  
SELECTION OF DEPENDABLE  
CENTRAL HEATING CONTROLS!



Mr. Controls

**Robertshaw-Fulton**

**CONTROLS COMPANY**

GRAYSON CONTROLS DIVISION

Long Beach, California



# BOOST Your FALL and WINTER SALES

U. S. PERIMETER DIFFUSER and INTAKE  
are "WORLD-BEATERS" . . . ASK YOUR JOBBER

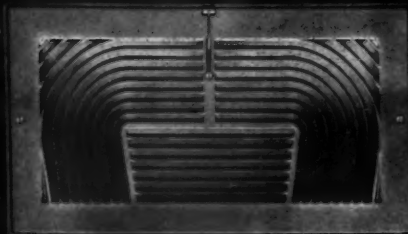
No. 1000 U.S. BASE DIFFUSER HAS PROVEN  
ITS SUPREME POSITION WITH  
PERIMETER SYSTEMS

Patented U.S. No.  
Des. 178052

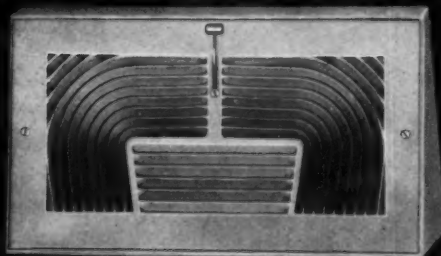


The Set-Lock is an original — Not a Copy. The Slide-Plate Bottom is an Original that Saves Cutting and Installation Time. No. 1000 DIFFUSERS are made in Two and Four Foot Sizes with which any desired lengths may be assembled.

ANOTHER U.S. "ORIGINAL DESIGN" THAT SETS A NEW PACE FOR PERIMETER DIFFUSERS. THE NO. 105 U.S. SIDEWALL and NO. 106 U.S. BASE DIFFUSERS

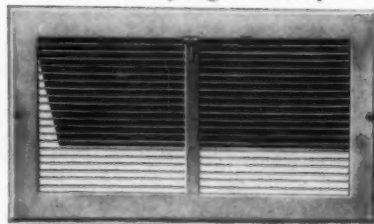


No. 105 U.S. DIFFUSER SIDEWALL REGISTER  
(U.S. Patent Number 176,926)



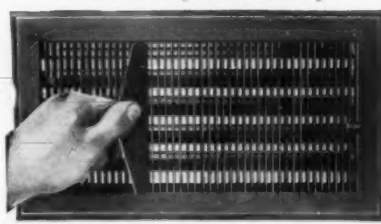
No. 106 U.S. DIFFUSER BASE REGISTER

No. 153 (Single Valve)



THE GREATEST SINGLE  
VALVE and MULTI-VALVE  
STYLES of AIR CONDI-  
TIONING REGISTERS ON  
EARTH—LOWEST COSTS

No. 256 (Multi-Valve)

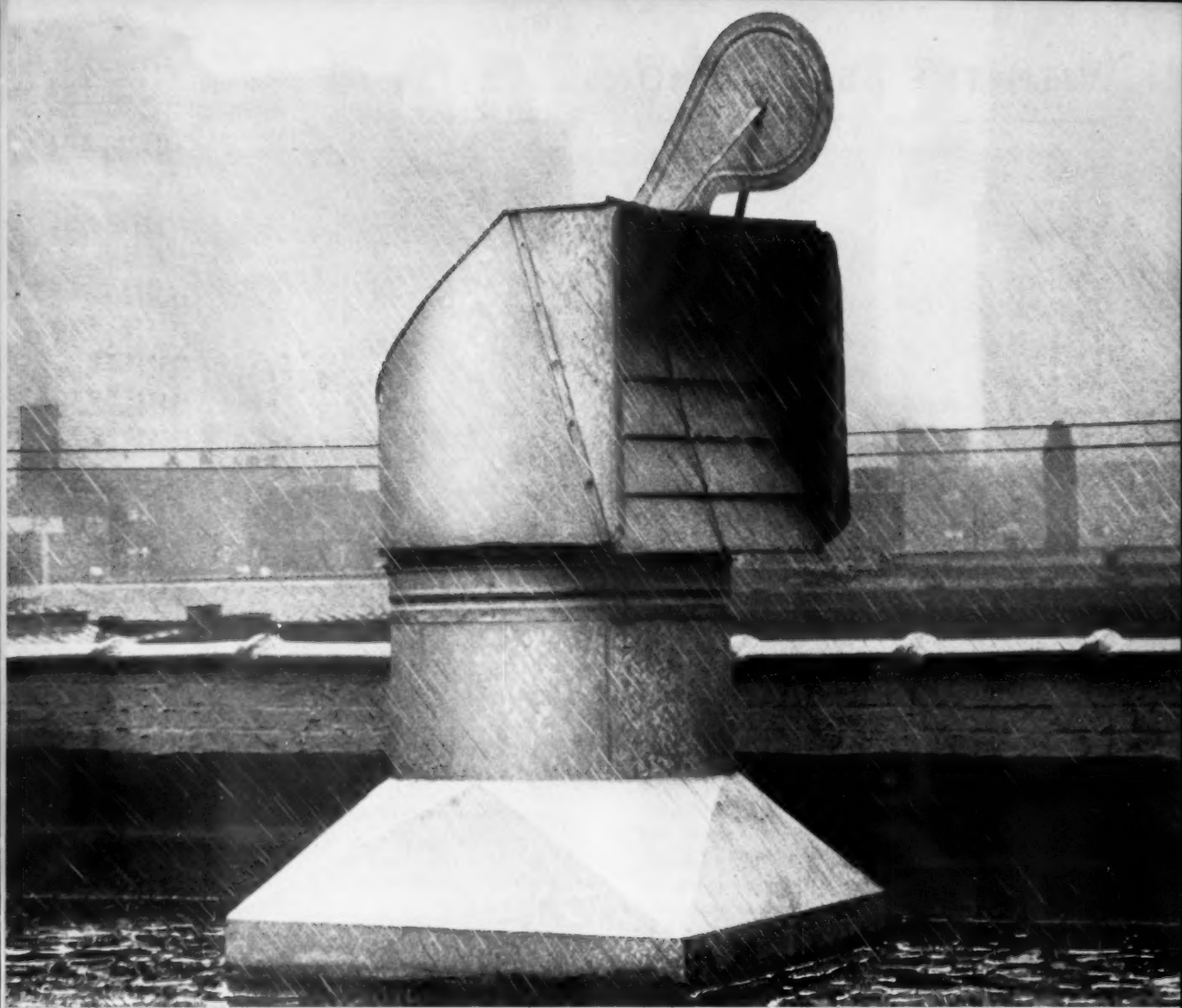


GET OUR COMPLETE PRICE STRUCTURE

**UNITED STATES REGISTER COMPANY**

BATTLE CREEK, MICHIGAN  
MINNEAPOLIS • KANSAS CITY • ALBANY





## **WEIRKOTE'S<sup>®</sup> skin-tight zinc coating never gives rust a break**

No wonder the steady shift is to Weirkote zinc-coated steel! No wonder more and more spec sheets insist on Weirkote—like this:

***SHEET METAL WORK—Materials—Galvanized steel. Unless otherwise specified, this shall be of 26-gauge galvanized sheet steel, of "Weirkote" with make and gauge stamped on each sheet.***

Weirkote's continuous-process zinc coating is uniformly skin tight, flawless. It's made that way to stay that way through the toughest fabrication

and roughest job-site handling. No flaking, no peeling.

It brings first-class corrosion resistance and long life to roof ventilators, heating and ventilating ductwork, ducts for dust and fume removal, rain drainage systems, water type air coolers, other sheet metal uses. Low first cost, low maintenance cost.

*Free Weirkote Booklet*

*Send for the new Weirkote booklet today. Write Weirton Steel Company, Dept. J-17, Weirton, West Virginia.*



**WEIRTON STEEL  
COMPANY**

WEIRTON, WEST VIRGINIA  
a division of

**NATIONAL STEEL CORPORATION**



**FIRST PRIZE** winner at the Chicago Warm Air Golf Association's mid-season meeting was Robert P. Johnsen (left), who receives his prize from Lars Schulein, prize committee chairman



**LOW SCORE** winners proudly displaying their prizes are (l to r): Hank Repple, Babe Frick, Ivar Anderson, Joe Butler, Len Miller and Rudy Guenther, (seated) Charles R. Bennett

## Chicago

### Holds Season's Second Tournament

CHICAGO WARM AIR Golf Association members and guests held their second tournament at the Itasca Country Club on Aug. 13. The Peoria system of handicapping was used to permit golfers with less experience to qualify for the many prizes. Robert P. Johnsen, Atomic, Inc., won first prize with a net score of 66. Wayne Limbert, Condensation Engineering Co., was second with a score of 68. Third prize went to Hank Repple, Flo-Rite Heating and Ventilating Co., who turned in a net score of 69.

#### Other Prize Winners Listed

Other prize winners in order of their score were:

- Reid Olson, Barney Olson, Inc.
- Ivar Anderson, Anderson Heating Co.
- E. H. Frick, Robinson Furnace Co.
- Rudy Guenther, Accurate Sheet Metal
- Lars Schulein, Lars Schulein Co.
- Len Miller, Austin Sheet Metal Works
- Chas. E. Price, American Artisan
- Alan Macnider, Alan Furnace Co.
- F. J. Butler, Auer Register Co.
- John J. Nimeth, Robinson Furnace Co.
- James Van Slyke, Biddle Co.
- Al Verbeek, Verbeek Heating Co.
- George F. Anderson, Condensation Engineering Co.
- Jerry Anderson, Anderson Heating Co.
- W. Macnider, Alan Furnace Co.

James A. Madden, Maid-O-Mist, Inc.

Charles R. Bennett, Armstrong Heating Supply Co.

The Blind Bogy contest was won by Chas. E. Price and W. Macnider.

#### Public to See ARI Show

AS AN AID to exhibitors who wish to do market research, study copy themes for advertising and get consumer reactions to new models, the Air Conditioning and Refrigeration Exposition will, for the first time, open its doors to the general public on the final day. The show, sponsored every two years by the Air Conditioning and Refrigeration Institute, will be held at the International Amphitheatre, Chicago, Nov. 18-21.

Sale of space to exhibitors at the exposition is already above that of the last show, according to R. H. Israel, general chairman of the exposition committee. Mr. Israel predicted a sell-out of all available space. Attendance is expected to top 15,000 and set another record.

#### Detroit Holds Annual Outing

THE ANNUAL heating industry outing of the Detroit Warm Air Heating Association was held on Aug. 8 at the Hillcrest Golf and Country Club. The golf tournament was held in the afternoon and a dinner followed.

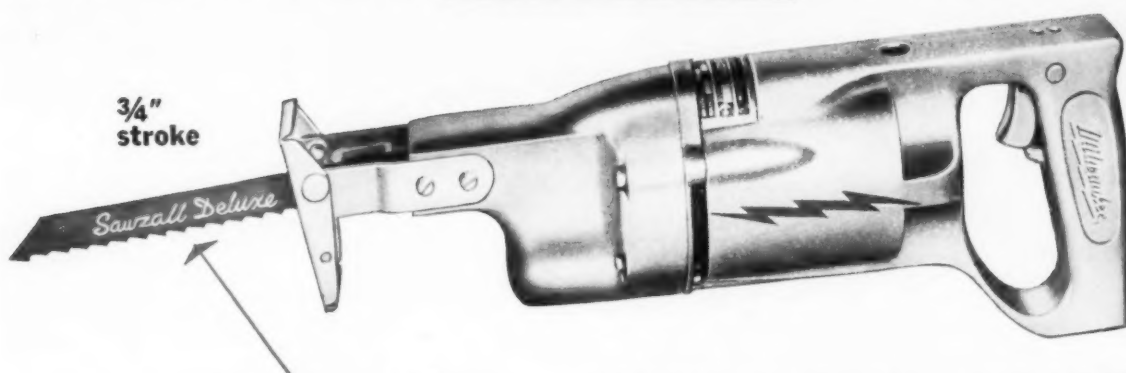
(More association news on page 100)



# SAWZALL

all-purpose Electric Hacksaw

Now cuts wood twice as fast as before...



with New *Genuine* **SAWZALL Deluxe BLADES**  
that cut twice as fast — last 10 times longer!



and only  
**\$89.50**

SAWZALL complete with  
24 sample blade assort-  
ment and sturdy, steel  
carrying case.

With SAWZALL and these new, Deluxe Blades, you can breeze easily thru any thickness of wood like sheathing, 2 x 4's or heavy joists. You can "plunge-cut" without a starting hole, cut any shape, saw close, right or left.

You'll like the feel and balance of SAWZALL... how easily it cuts through wood, composition structural materials, etc., with these *new* faster cutting, longer lasting blades. For fast roughing-in or scroll cutting, you just can't beat the SAWZALL Deluxe blades. Made of the best saw blade steel, their *new* EXCLUSIVE "Shear Tooth" design provides the fastest known sawing action... easier, cleaner, cutting with high resistance to embedded nails.

**Simple Rugged Construction:** SAWZALL has just a few moving parts. No complicated mechanisms. All steel hardened gears and shafts. Full ball and roller bearings.

**Gets in the Tight Spots:** Blade straddle-mounted and supported on both sides; centered for close sawing right or left.

**Powerful:** Full 1/2 HP Milwaukee-built motor delivers its full power through most friction-free linkage with minimum current consumption. Cooler running, won't overload, won't overheat.

**Ideal balance:** Weighs only 6 3/4 lbs. Even weight distribution provides easy one-hand operation. No extra forward handle needed.

**39 Genuine SAWZALL Blades:** A size and type for every sawing need. Deluxe blades for fastest cutting, longest life.

**Sensibly Priced:** Only \$89.50 complete... Pays for itself quickly out of the savings it effects.

Arrange now with your distributor for demonstration of SAWZALL and the *new* Deluxe Blades, or write us for literature.

**MILWAUKEE ELECTRIC  
TOOL CORPORATION**

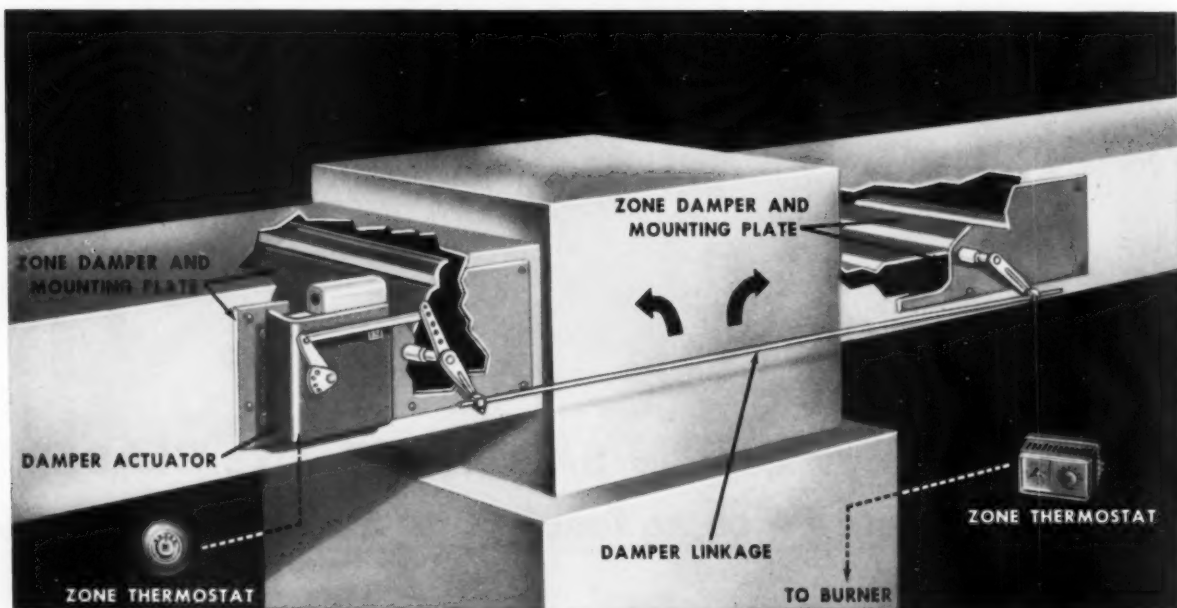
5352 WEST STATE STREET

MILWAUKEE 8, WISCONSIN

A7-9297

# Get the most—in customer

*with Honeywell*

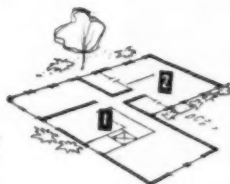


ABOVE you see a Honeywell two-zone Balancing System which uses only *ONE* Actuator to control the dampers for *TWO* zones. And it's done by means of a simple linkage.

Key to the whole system is a Honeywell *Modulating Damper Actuator*. This actuator operates dampers in the zone ducts to continuously increase or decrease

the heated or cooled air volume as called for by the thermostats. It's easily mounted on the ducts in five simple steps.

For complete, detailed information on the new Honeywell Warm Air Zone Rebalancing System or details on wet heat zoning equipment, call your local Honeywell office. Or write direct to Minneapolis-Honeywell, Dept. AA-9-123, Minneapolis 8, Minn.



## 5 Easy Steps To Install Honeywell Actuator-Damper Package

(Includes Honeywell D522A Damper, M829 modulating actuator motor with linkage and Q401A Mounting Plate)



**Step 1**—Determine where the damper is to be mounted and measure for the front and rear bearing surface. Honeywell Zone Rebalancing Kit contains all the necessary parts and instructions.



**Step 2**—Cardboard templates are provided in every Honeywell Zone Rebalancing Kit. By using a template and locating it over the previously scribed bearing location, damper slot can be cut out easily.



**Step 3**—After measuring width of duct, cut the damper to the length which is desired—cutting can be done quickly and easily. No other damper alterations are necessary for standard residential ducts.



# satisfaction and job profits

## Zone Rebalancing

*You profit when you turn these 6 big problem areas into comfort areas.*

1. Split-level homes with convection between floors
2. Finished basements
3. Spread-out floor plan with exposure differences
4. Living and sleeping areas
5. Large picture windows with variable heat gain and loss
6. Rooms over a garage or unheated areas

**H**ERE'S a modulating system that gets maximum comfort and efficiency out of your heating-cooling units.

Honeywell Zone Rebalancing means dividing the home into two or more comfort areas. The thermostat in each area continually adjusts the distribution of

heating or cooling to maintain the exact temperature requirement of each individual zone.

Honeywell Zone Rebalancing is an inexpensive yet unique comfort feature that will enable you to realize an extra profit margin on every job. And you'll be way ahead when it comes to customer satisfaction.

*These time-tested Honeywell components make Zone Rebalancing the ultimate answer for heating-cooling installations.*



M829A Modulating Motor can now be part of a low-cost single Actuator, 2-Zone Rebalancing system.



Simplified Wiring Panel for heating-cooling systems. Sturdily built for trouble-free performance.



T 86, for heating. It comes with sealed, dust-proof mercury switch.



T 87, for heating-cooling. It's rugged, dependable and precision-built.



Electric Clock Thermostat for Automatic Set Back in heating.

Your choice of three thermostats



**Step 4**—Drive the pointed damper shaft through the far side of the duct and insert damper. The mounting plate on the cutaway side is then easily fastened to the duct to hold damper in position.



**Step 5**—Mount Actuator on mounting plate and connect linkage to damper shaft. The simple, low voltage wiring is then run to the wiring panel and thermostat to complete the entire installation.

## Honeywell



*First in Controls*



**THE INEVITABLE HORSESHOES**, found wherever Fox Valley association members get together, bring about a point of discussion between Peter Jungles (left) and Fred Westbrook at association picnic



**JUDGING** the play are (l to r) George Bushman and Don Gossett. Winners Chester Fox and Ed Godlewski watch with interest

## Fox Valley Holds Field Day, Picnic

THE FOX VALLEY (Illinois) Furnace and Sheet Metal Contractors Association held its 23rd annual field day on July 25 at the Fox Valley Country Club. The event attracted 112 dealers and suppliers for the golf tournament, horseshoe pitching contest and banquet.

Each year the best teams of horseshoe pitchers vie for the Bushman Cup, a prize donated by George Bushman, one of the charter members of the association. At one time or another, he has held almost every office in the organization over its 24 year history. The cup this year was awarded to Ed Godlewski and Chester Fox. Second place was won by Tom Moher and Hank Repple and third place by John Rubo and Peter Jungles.

Golf prizes were awarded to John Duriavich and Jack Haried for low gross scores. Blind bogey prizes went to Ray Considine, Jim Halloway, D. Hadley, John Bremer, Ed Doyle and Larry Felker. Consolation prize for the two highest scores went to Leo Winter and Harold Vycital.

On August 21 the order of the day was complete relaxation and good food at a family picnic held by the association at Columbian Park near Batavia. Festivities began at about 6:30 p.m. with an inter-association horse-

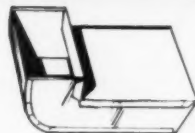
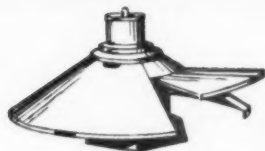


**GOLF COMMITTEE** of the Fox Valley association tabulate the winners, (l to r) L. Heinz, M. Keifer, Art Warren and Jack Haried

shoe tournament which was interrupted by a call to dinner of roast beef, corn on the cob and ice cream.

President John Rubo and his entertainment committee decided to dispense with organized games for the children who found ample entertainment in the large playground and baseball field while the adults pitched horseshoes and enjoyed the opportunity to "unwind" after the day's work. Lights were turned on after dark throughout the park.

(More association news on page 104)



If you want fast service on  
**GALVANIZED SHEETS**  
that form easily into any shape  
without flaking, chipping, cracking  
or peeling...Call...

## GREAT WESTERN STEEL

Galvanized by the most modern continuous process these quality sheets have the tightest zinc coating ever.

They will not flake, chip, crack or peel no matter how tough the job. And the sparkling bright finish stays right with the job . . . reflecting quality and permanence for enduring satisfaction.

Our large stocks of galvanized sheets and fast service bring you all the steel you need . . . the way you want it . . . when you want it . . . where you want it. Call HEmlock 4-5800.

**Make GREAT WESTERN  
Your Warehouse for Steel  
Hold Your Inventories Down  
Reduce Your "Cost of Possession"**



Call Great Western: HEmlock 4-5800

**GREAT WESTERN  
STEEL COMPANY**

ESTABLISHED 1918

General Office and Plant:

2300 W. 58th St., Chicago 36, HE 4-5800

Milwaukee Division: 2475 W. Hampton Ave., Hilltop 4-3092

REPRESENTATIVES IN PRINCIPAL MIDWESTERN CITIES

In addition to Galvanized Sheets and Strips and Galvannealed Sheets GREAT WESTERN STEEL carries large stocks of

Cold Rolled Sheets  
Hot Rolled Sheets  
Hot Rolled Pickled  
Sheets

Cold Rolled Strip  
Hot Rolled Strip  
Hot Rolled Pickled  
Strip

# WE COMPARED ALL OF THE LEADING FUEL OIL FILTERS!

**COMPARE!** **HERE ARE THE FACTS ABOUT FUEL OIL FILTERS!**  
Comparison of GENERAL FUEL OIL FILTERS with other Leading Makes

KEY FEATURES	GENERAL FILTER 1A-35A & 2A-700A	FILTER "A"	FILTER "B"	FILTER "C"	FILTER "D"	FILTER "E"	FILTER "F"
<b>ALL IRON AND STEEL CONSTRUCTION</b> No glass or soft ventils. Nothing to crack, chip or wear out.	YES	NO	NO	YES	NO	NO	NO
<b>CORROSION-PROOFED INSIDE AND OUTSIDE</b> New porcelain-like, plastic finish on both inside and outside surfaces of filter body impervious to water, acids and oil.	YES	NO	YES	NO	NO	NO	NO
<b>AIR VENTS ON BOTH INLET AND OUTLET</b> Allows bleeding of lines without disconnecting filter.	YES	NO	NO	NO	YES	NO	NO
<b>CHOICE OF INLET AND OUTLET SIZES</b> Available either with standard 1/2" pipe openings, or with 1/4" or 3/8" at slightly extra cost.	YES	NO	NO	YES	NO	NO	NO
<b>CENTER BOLT TORQUE RESISTANCE OVER 300 IN.-LBS.</b> Improved design withstands maximum tightening without stripping of threads or distortion of bowl.	YES	YES	NO	YES	NO	YES	NO
<b>NON-SWELLING, LEAKPROOF BUNA-N GASKETS</b> Seal in special cupped rim of bowl for positive seal between cap and bowl. No seepage leakage or fumes.	YES	NO	NO	NO	NO	NO	NO
<b>DEPTH-TYPE WOOL FELT ELEMENT</b> Oil cleaned through entire thickness of cartridge to center core - not just at outer surface. Greater dirt capacity before changing elements.	YES	YES	NO	NO	YES	NO	NO
<b>PATENTED LINT REMOVAL</b> Bonds all lint particles to wool felt preventing passage into fuel lines.	YES	NO	NO	NO	NO	NO	NO
<b>MOISTURE AND CONDENSATION REMOVAL</b> Wool felt removes moisture as well as dirt particles - only filtering medium effective against both.	YES	YES	NO	NO	YES	NO	NO
<b>LARGE SUMP AREA</b> For trapping and holding large quantities of water, scale, etc.	YES	YES	NO	NO	YES	YES	NO
<b>TOTAL KEY FEATURES</b>	<b>10</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>0</b>
<b>GENERAL FUEL OIL FILTERS OFFER MORE KEY FEATURES MORE BURNER PROTECTION... MORE CUSTOMER SATISFACTION!</b>							

**GENERALS  
WIN  
HANDS  
DOWN!**

**MORE**  
Key Features

**MORE**  
Oilburner Protection

**MORE**  
Customer Satisfaction

**GENERAL**



**Fuel Oil Filters**

America's Original —  
and Still FINEST!

HERE'S PROOF of superiority! This chart compares all of the nationally-advertised, leading makes of fuel oil filters FEATURE FOR FEATURE . . . shows exactly how each rates when it comes to the KEY FEATURES which determine performance — and sales!

All of the "name brands" are included; yet only GENERAL FUEL OIL FILTERS have all 10 of these key features. The "next best" filter has only 4 out of 10. One make doesn't have a single one!

These facts should be a graphic reminder to COMPARE before choosing any filter. As we've said all along, compare basic features and you'll stock and sell America's Original — and still the FINEST — General Fuel Oil Filters. Over 5 million sold!



Goodwill Builder! CLEAN RIGHT Soot Remover is the answer to soot-packed flues! Take a can along on your next service call. Destroys all soot swiftly and safely . . . up to 1/8" in 2-5 minutes.

Here's Another Leader! General Humidifier is designed with service in mind. No float . . . nothing to clog! Scientifically humidifies—automatically.

**GENERAL FILTERS, INC.**

1000 Grand River Avenue

St. Louis, Missouri

World, Chicago

and San Francisco, California





**NOW!**

# You Can Buy Prefab' **MONCRIEF** Snaplock Plenums

**FOR ANY MAKE OF FURNACE**

*For a Fraction of the Cost of Building Your Own!*

**It's as Easy as 1 • 2 • 3 to ...**

**1 SAVE  
FABRICATING TIME!**



SnapLock Plenum parts arrive securely banded for compact shipment, easy handling and convenient storage!

**2 SAVE  
INSTALLATION TIME!**



SnapLock Plenums are speedily assembled by one man without the necessity of nuts, bolts, screws or special tools!

**3 MAKE MORE MONEY!**



SnapLock Plenums make a cost-saving, time-saving, snug-fitting job that puts extra dollars in your pocket!

**Write for the  
FREE Illustrated  
Catalog!**

**Check These Typical Prices for  
24" High Plenums**

Plenum Number	Plenum Size	Net Dealer Price	Check These Many Applications
#23 A	14x16	\$3.20	Fits 8 Moncrief Units ... Many Others
#44 A	18x18	3.80	Fits 6 Moncrief Units ... Many Others
#66 A	22x22	4.65	Fits 9 Moncrief Units ... Many Others

Plenums 30" and 36" high at slightly higher prices.

**FOR LITTLE MORE THAN THE COST OF MATERIAL**

You can now order excellent prefabricated plenums — Moncrief SnapLock Plenums, precision-fabricated at the factory to fit virtually any make or size of furnace — and save plenty of money!

But your original saving is just a start, because Moncrief Plenums require less storage space and less hauling space, saving many trips back and forth to your shop. On the job, the convenient snap-locks make it possible to snap the five panels together easily and quickly.

If you have been looking for ways to make your installations faster and better, try Moncrief SnapLock Plenums for your next job.

The nearby wholesaler, who handles Moncrief Pipe and Fittings, has the new Plenum Price List that will show you how to make more money on every installation!

**Warm Air Plenums! Return Air Plenums! Plenums for Basement, Hi-Boy, Counterflow, Horizontal — All Furnaces!**

**MONCRIEF SUREFIT PIPE — STACK — DUCT — ANGLES — ELBOWS**



Snap Lock  
Pipe  
24" Joints  
60" Joints



Snap Lock  
Stack  
24" Joints  
60" Joints



Snap Lock Duct  
32" Joints  
64" Joints



Snap Lock  
End Boot



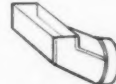
Return Air  
Boot



Adjustable  
Round Take-off



Horizontal  
Elbow



Angle  
Register Box

**THE HENRY FURNACE COMPANY • Medina, Ohio**

HEATING AND AIR CONDITIONING UNITS

**MONCRIEF**

FURNACE PIPE AND FITTINGS

## WITH THE ASSOCIATIONS

(Continued from page 100)



FOX VALLEY association president, John Rubo (right), welcomes new honorary members, George Tansil (left) and Lou Reining

### Reining and Tansil Honored

DURING the 24 years that the Fox Valley (Illinois) Furnace and Sheet Metal Contractors Assn. has been active, it has taken in only two honorary members. Recently, two additional honorary members were elected: Lou Reining, Chicago, representative of Brundage Co., Automatic Humidifier Co. and Connor Engineering Co., and George Tansil, Minneapolis-Honeywell Regulator Co.

Both of the new honorary members have consistently contributed to the association's educational program throughout its history. John Rubo, president of the association, welcomed the two men to honorary membership, saying, "We owe Lou Reining and George Tansil so much for the assistance and guidance they have given so freely in the past. We feel that they are part of our organization and we want to make this official by bestowing upon them some evidence of our appreciation. We welcome them as honorary members."

During the association's 24-year history it has operated as an organization of dealers and contractors, working on programs directed toward solving problems at the dealer level. Its meetings have been restricted to members and prospective members only. Suppliers have not been invited, in contrast with the practice of most local associations. All expenses have been handled by the association's income from membership dues. Twice a year the members hold social meetings to which suppliers are invited with the association as host.

### Grand Rapids Launches Ad Program

A PUBLIC EDUCATION program has been launched by the Grand Rapids Heating Association through a series of newspaper advertisements. The purpose of the program is to inform purchasers of heating equipment in new or existing homes of the importance of requiring from their heating dealer or building contractor definite as-

surance that the system will furnish economy and comfort during its entire lifetime.

The initial ad schedule calls for a 2 column, 10 in. ad in the building section of the local newspaper every two weeks for a six month period. The readers are given eight specific questions to ask in judging a heating system. The first ad featured all eight questions. Future ads will treat each question in greater detail, one at a time. When the series has been completed the ads will be repeated. F. E. Ederle, executive secretary, reports.

In contrast to the similar program used by the Milwaukee association, the Grand Rapids ads do not feature the names of the members. The only name connected with the ads is that of the association itself.

The program is being financed by the association and its affiliated jobbers. The jobber members have been solidly supporting the program, Mr. Ederle reports. He says that they are particularly pleased that the program is covering the industry and not just the member dealers. The committee in charge of the program includes Richard Williamson, Harry Maring, and Arthur Anderson.

The Grand Rapids organization has also started a monthly newsletter to keep its members informed of the progress of association programs. The bulletin is edited by the executive secretary under the direction of the board of directors and the policy committee. The committee members are Arnold VanDyken, Arthur Anderson and Richard Steigmeyer.

Officers of the association are Clarence Blakeslee, president; Harry Maring, vice president, and Earl Wierenga, secretary-treasurer. Members of the board of directors are Marvin Schaafsma, Arnold VanDyken, Waldo Anderson, James Nydam, Richard Steigmeyer, and Arthur Anderson. The latter three were recently elected for three year terms.

The August meeting of the association heard a talk by Richard H. Pettinga, Hopson-Bennett Co., who discussed "Hidden Overhead Costs and Their Effect on Your Annual Profit and Loss Statement."

### Stanley Heads Carolinas Association

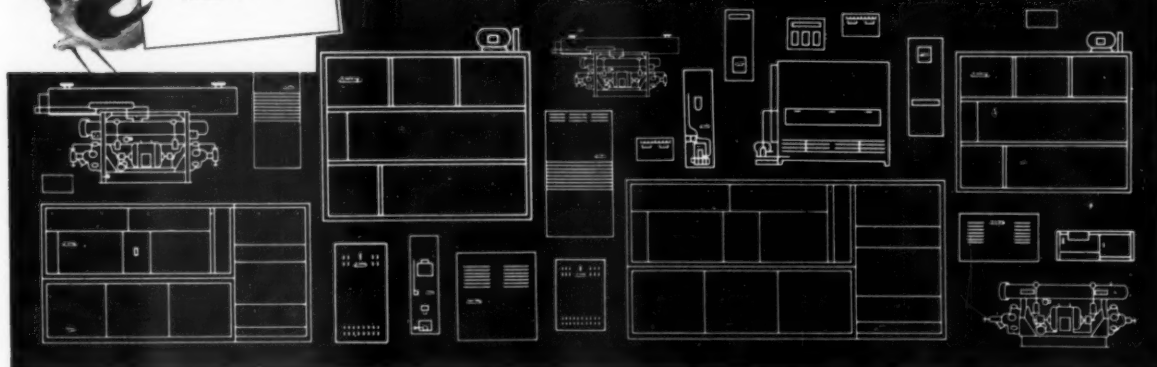
NEW OFFICERS elected by the Carolinas Roofing and Sheet Metal Contractors Association at its recent convention are: John S. Stanley, president; J. Roy Martin, first vice president; Julian McKeithan, second vice president, and Don Caldwell, secretary treasurer. Elected to the board of directors were Sam Piper, Ben Pickens, Evans Spell, William T. Fort, W. P. Young, Gerald Stewart, H. M. Browder, Morris Apple, John Southall, and W. P. Budd, Jr.

The association also announced the employment of Fred Whitaker as executive secretary. An advisory board was elected by the convention. It includes R. J. Barnes,

(More association news on page 109)



*With Chrysler's* **AIRTEMP**



## AIRTEMP'S QUALITY FURNACES HELP DEALERS BUILD SALES!

Airtemp furnaces are easier to sell because people know and respect the Chrysler name. Your customers know it means exceptional value and trouble-free operation at a moderate price. And in addition—

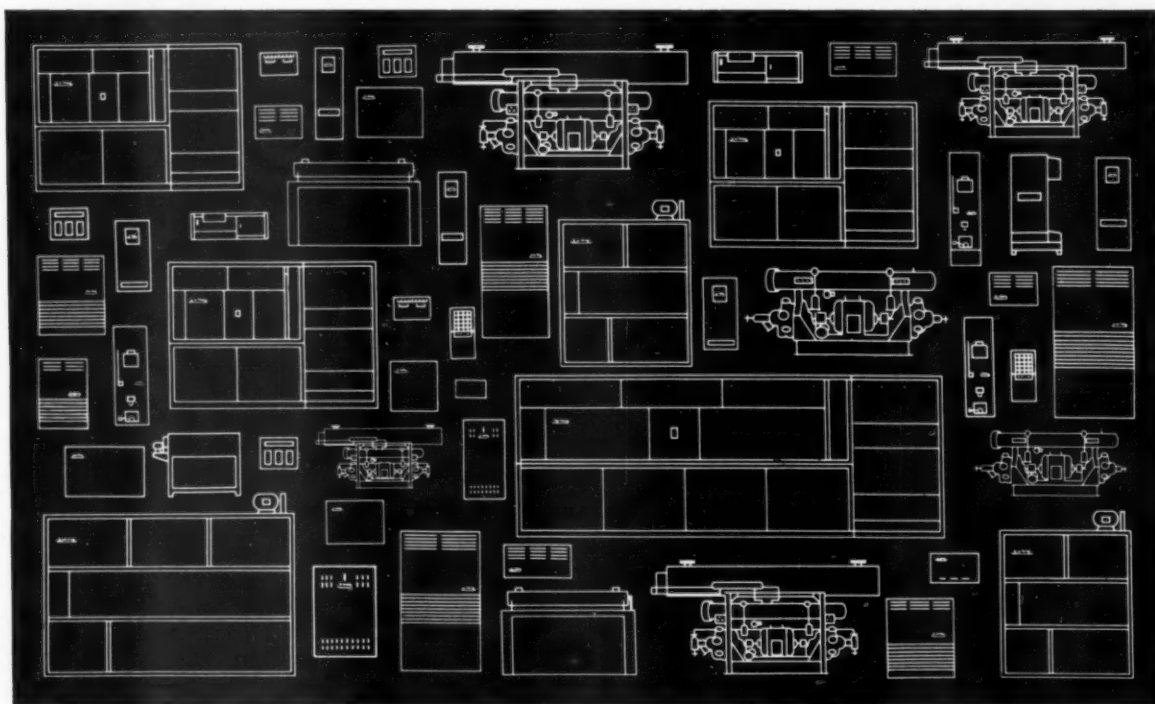
**Every Airtemp furnace** is warranted for one year—the heat exchanger for ten years!

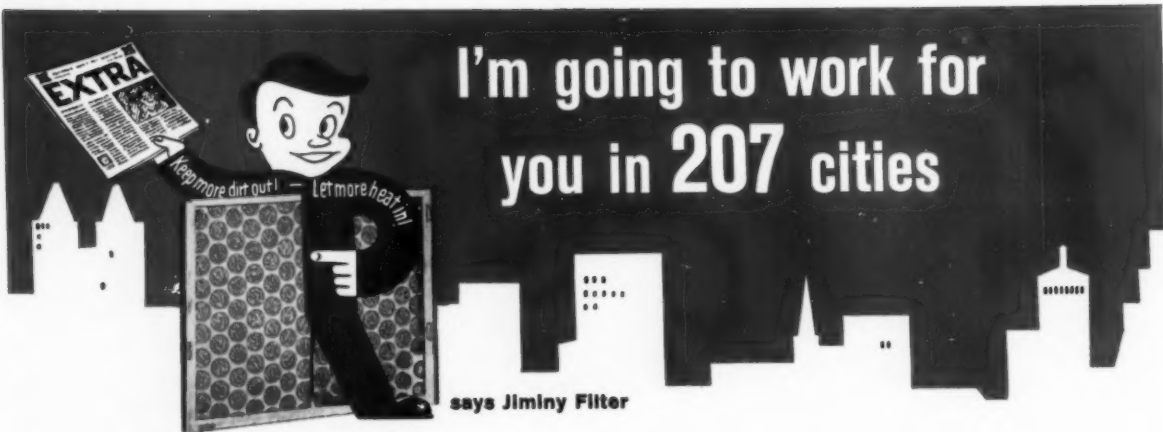
**Every Airtemp furnace** has an over-sized blower, belt-driven for quiet, efficient operation.

For fast installation, furnaces are delivered assembled, pre-wired and tested. Big and small dealers can count on the same fair treatment. That means honest pricing... sales help... prompt delivery... and flexible credit.



*For information on an Airtemp franchise, write to  
Airtemp Division, Chrysler Corp., Dayton 1, Ohio*





**FIND YOUR TOWN** among the 207 cities where Sunday supplements will carry advertising of Fiberglas\* DUST-STOP\* furnace filters during the fall selling season. Here's local advertising support delivered right to your customers' doorsteps—24 million strong! Be the first in your town to tie in with this program. Your DUST-STOP Distributor will supply Jiminy Filter Display, banners and other materials FREE! Owens-Corning Fiberglas Corporation, Dept. 35-1, Toledo 1, Ohio.

**A** Abilene, Texas  
Albany, Ga.  
Albert Lea, Minn.  
Altoona, Pa.  
Altus, Okla.  
Anderson, Ind.  
Anderson, S. C.  
Anniston, Ala.  
Ardmore, Okla.  
Asbury Park, N. J.  
Ashland, Ky.  
Athens, Ohio  
Atlanta, Ga.  
Austin, Texas

**B** Bakersfield, Calif.  
Baltimore, Md.  
Beckley, W. Va.  
Big Spring, Texas  
Biloxi, Miss.  
Birmingham, Ala.  
Bloomington, Ill.  
Bluefield, W. Va.  
Bogalusa, La.  
Boise, Idaho  
Boston, Mass.  
Bowling Green, Ky.  
Brownsville, Texas  
Buffalo, N. Y.  
Burlington, Vt.

**C** Canton, Ohio  
Casper, Wyo.  
Champaign-Urbana, Ill.  
Charlotte, N. C.  
Cheyenne, Wyo.  
Chicago, Ill.  
Cincinnati, Ohio  
Cleveland, Ohio  
Colorado Springs, Colo.  
Columbus, Ohio  
Concord, N. C.  
Coshocton, Ohio  
Council Bluffs, Iowa  
Cumberland, Md.

**D** Dallas, Texas  
Danville, Ill.  
Danville, Va.  
Davenport, Iowa  
Dayton, Ohio  
Daytona Beach, Fla.  
Denison, Texas  
Denton, Texas  
Denver, Colo.  
Des Moines, Iowa  
Detroit, Mich.  
Dothan, Ala.  
Dubuque, Iowa  
Duncan, Okla.

**E** El Dorado, Ark.  
Elmira, N. Y.  
Enid, Okla.  
Eugene, Ore.  
Eureka, Calif.

**F** Fairmont, W. Va.  
Fayetteville, N. C.  
Florence, Ala.  
Florence, S. C.  
Fort Lauderdale, Fla.  
Fort Myers, Fla.

**G** Gadsden, Ala.  
Gainesville, Fla.  
Galveston, Texas  
Grand Junction, Colo.  
Grand Rapids, Mich.  
Greenville, Miss.  
Greenville, Texas

**H** Harlingen, Texas  
High Point, N. C.  
Hobbs, N. M.  
Hot Springs, Ark.  
Houston, Texas  
Huntington, Ind.  
Huntsville, Ala.  
Huron, S. D.

**I** Idaho Falls, Idaho  
Indianapolis, Ind.  
Ironton, Ohio  
**J** Jackson, Tenn.  
Jacksonville, Fla.  
Jefferson City, Mo.  
**K** Kankakee, Ill.  
Kansas City, Mo.  
Kilgore, Texas  
Kingsport, Tenn.  
Klamath Falls, Ore.

**L** Lafayette, La.  
Lake Charles, La.  
Lancaster, Pa.  
Laredo, Texas  
La Salle, Ill.  
Las Vegas, Nev.  
Lawton, Okla.  
Lewiston, Idaho  
Lima, Ohio  
Logan, Utah  
Logansport, Ind.  
Lorain, Ohio  
Los Angeles, Calif.  
Louisville, Ky.  
Lowell, Mass.  
Lufkin, Texas  
Lynchburg, Va.

**M** Manchester, N. H.  
Mansfield, Ohio  
Marion, Ind.  
Marshall, Texas  
McAllen, Texas  
Medford, Ore.  
Memphis, Tenn.  
Meridian, Miss.  
Miami, Fla.  
Middletown, Ohio  
Midland, Texas  
Milwaukee, Wisc.  
Minneapolis, Minn.  
Monterey, Calif.  
Muncie, Ind.

Muskogee, Okla.

**N** New Albany, Ind.  
New Brunswick, N.J.  
New Haven, Conn.  
New Orleans, La.  
New York, N. Y.  
Newark, Ohio  
Norfolk, Va.

**O** Ogden, Utah  
Orlando, Fla.  
Owensboro, Ky.

**P** Paducah, Ky.  
Panama City, Fla.  
Paris, Texas  
Parkersburg, W. Va.  
Pasco, Wash.  
Pensacola, Fla.  
Philadelphia, Pa.  
Phoenix, Ariz.  
Pine Bluff, Ark.  
Pittsburgh, Pa.  
Pocatello, Idaho  
Port Arthur, Texas  
Portland, Ore.  
Poughkeepsie, N. Y.  
Providence, R. I.  
Provo, Utah  
Pueblo, Colo.

**Q** Quincy, Ill.

**R** Racine, Wisc.  
Rapid City, S. D.  
Reno, Nev.  
Richmond, Va.  
Rochester, N. Y.  
Rome, Ga.  
Roswell, N. M.

**S** Sacramento, Calif.  
St. Louis, Mo.  
Salem, Ore.  
Salisbury, N. C.  
Salt Lake City, Utah

San Angelo, Texas  
San Antonio, Texas  
San Francisco, Calif.  
Santa Ana, Calif.  
Santa Barbara, Calif.  
Santa Fe, N. M.  
Santa Rosa, Calif.  
Sarasota, Fla.  
Seattle, Wash.  
Sioux City, Iowa  
Snyder, Texas  
Spartanburg, S. C.  
Spokane, Wash.  
Springfield, Ill.  
Springfield, Mo.  
Suffolk, Va.  
Syracuse, N. Y.

**T** Tallahassee, Fla.  
Tampa, Fla.  
Texarkana, Texas  
Toledo, Ohio  
Trenton, N. J.  
Tupelo, Miss.  
Tuscaloosa, Ala.  
Tyler, Texas

**U** Utica, N. Y.

**V** Vallejo, Calif.  
Vicksburg, Miss.  
Victoria, Texas  
Vincennes, Ind.

**W** Waco, Texas  
Walla Walla, Wash.  
Washington, D. C.  
Waterloo, Iowa  
Wenatchee, Wash.  
West Palm Beach, Fla.  
Wichita, Kan.  
Wichita Falls, Texas

**Y** Yuma, Ariz.

**Z** Zanesville, Ohio

OWENS-CORNING  
**FIBERGLAS**

**DUST-STOP** AIR FILTERS

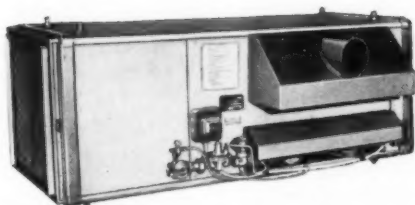
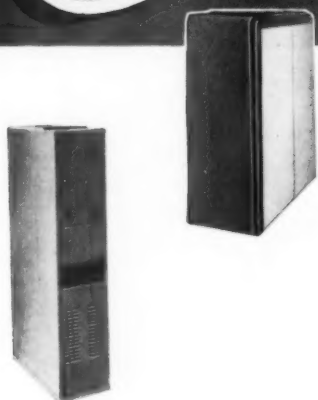
\*Fiberglas and Dust-Stop are trade-marks (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation.





# CRANE

## Sunnyland



### Meet the newest and easiest selling name in the warm air heating industry

If people *know* the name of the furnace or air conditioner—and they *trust* that name—your selling job is that much easier. This is just one of the many reasons Crane Sunnyland equipment is so easy to sell.

Lots of other reasons, too: a complete line of warm air furnaces (both oil and gas)—hi-boy, counterflow, basement and horizontal types. Add-on and year 'round air conditioners. Competitive prices . . . backed by Crane's reputation for quality, dependability and service plus powerful national consumer advertising with local sales helps for you.

Call your Crane Branch or Crane Wholesaler now for more information on Crane Sunnyland warm air heating and air conditioning. Remember, you have more to gain when you sell Crane.

**CRANE CO.** 836 South Michigan Avenue, Chicago 5  
VALVES • FITTINGS • PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

# WARM AIR

## HEATING AND AIR CONDITIONING

# IMAGINE!

*What Would Happen If Registers  
were offered in Shapes like These—*



You'd be expected to handle and stock  
odd-shape registers just like the many  
odd-size registers that are being offered.



STANDARDIZED *Lima* LINE GIVES  
YOU ONLY THE REGISTERS THAT YOU  
SELL MOST OFTEN

ONLY LIMA gives you ALL  
These profit advantages

- ✓ SIMPLIFIED INVENTORY
- ✓ LESS CAPITAL INVESTMENT
- ✓ FASTER TURN-OVER
- ✓ REDUCED WAREHOUSE SPACE

- ✓ SIMPLIFIED HANDLING
- ✓ BETTER QUALITY
- ✓ GREATER SALES APPEAL
- ✓ BETTER CUSTOMER SERVICE

98% of your customers' register and diffuser needs can be answered with Lima's basic styles and sizes. Odd sizes account for so little of your business that they're as ridiculous as all the crazy, odd-shaped registers you can imagine.

Lima's Standardized Line gives you

Profit Advantages by eliminating those odd sizes that rob warehouse space as they become dust-covered and obsolete. Many Jobbers and Dealers have already found out that Lima's Standardized Line answers their needs BETTER . . . and at LESS COST!

**Lima**

WRITE US TODAY . . . IT WILL PAY YOU TO  
MAKE US PROVE OUR POINT  
**REGISTER COMPANY**

1786 N. Cable Rd., Lima, Ohio

*sold exclusively through wholesalers and manufacturers*

## WITH THE ASSOCIATIONS

(Continued from page 104)

Hilton Bowes, W. H. Arthur, all veteran members of the association.

Officers elected by the salesmen's group include: Dale E. Files, president; Thomas A. Wilder, first vice president; George Braun, second vice president, and D. E. Neal, secretary-treasurer.

### Form New Alabama Association

THE FORMATION of the Roofing, Sheet Metal, Heating and Air Conditioning Contractors' Association of Southeast Alabama has been announced. J. E. Saliba, Dothan, has been elected president. Mr. Saliba reports that there is much interest shown in the newly formed group by dealers in the Dothan area.

### AGA to Hear About Year 'Round System

ONE FEATURE of the recently announced program for the 39th annual American Gas Association convention Oct. 7-9 in St. Louis will be a discussion of year 'round gas air conditioning by J. Theodore Wolfe, president of the Baltimore Gas and Electric Co. This subject, which has received considerable attention throughout the industry, will be discussed at a combined luncheon of the residential and commercial-industrial gas sections. Mr. Wolfe is chairman of the gas industry development committee.

Another session of the residential gas section will include speeches by Sol Weill, George T. Roper Corp., and John H. Brinker, A. O. Smith Corp. Special guests will be Mrs. America of 1958, Mrs. Linwood Findley of Arlington, Va., and Miss Julia Meade, the gas industry's television hostess on "Playhouse 90" sponsored by AGA.

Nominees for principal association officers are: president—A. W. Conover, Equitable Gas Co., Pittsburgh; first vice president—Robert W. Otto, Laclede Gas Co., St. Louis; second vice president—J. Theodore Wolfe, Baltimore Gas and Electric Co., and treasurer—Vincent T. Miles, Long Island Lighting Co., Mineola, N.Y.

### Plan Southeastern States Meeting

PRELIMINARY arrangements for the sixth meeting of the officers and directors of allied associations in the states of Florida, Georgia, Alabama and the Carolinas have been made. The meeting will be held at Grove Park, Asheville, N. C., on Oct. 4-5.

### Ala. Meeting Emphasizes Management

ONE HIGHLIGHT of the annual convention of the Roofing, Sheet Metal, Heating and Air Conditioning Contractors Association of Alabama was the forum on management problems. Moderated by Earl Shelton, Montgomery, it featured an attorney, an accountant, a banker

and a representative from Dun and Bradstreet to discuss the various management problems which might confront a typical small businessman. Bill Wright, Montgomery, was general chairman of the convention.

Newly elected officers of the organization include: president—Emory Cunningham, Headland; first vice president—Harry Hahn, Jr., Birmingham; second vice president—Jim Pearson, Marion; third vice president—Herbert Lane, Audalusia, and secretary-treasurer—Ferris S. Ritchey, Jr., Birmingham.

### Rochester Holds Annual Picnic

THE ANNUAL summer picnic of the Master Sheet Metal, Furnace and Roofers Association of Rochester, N.Y., was held Aug. 14. After an afternoon of sports, the members attended an evening dinner. On display at the outing was a photograph of the organization's picnic held in 1937. Prizes were awarded to the members able to identify the most faces.

Committees for the year were announced by President Fred Pike. Chairmen of the committees are: Finance—Charles Schmitt; Welfare, Al Vonnhof; Publicity, William Schmidt, Jr.; Grievance and Cooperation, Lamont Childs; Program, Fred Kimmel, Jr.; Membership, R. MacLaughlin; Entertainment, Orville Brandt; Insurance, George Ballard, Sr.; Apprentice Training, George Ballard, Jr.; Heating Code, Richard W. Friday.

### UCLA Offers Air Conditioning Course

AN ACCREDITED engineering course in "Practical Air Conditioning" is being offered this fall for adult enrollment through the University of California Extension. Howard N. Helfman, vice president, Climate Conditioning, will lecture during the weekly sessions at the Los Angeles campus. The course was started Sept. 9. Information can be obtained from University of California Extension, Engineering, Los Angeles 24, Calif.

### Proportion in Labor Force Shrinks

THE NATION'S labor force is growing at a rate of about 1 percent annually, but the population as a whole is increasing at the faster rate of about 1.7 percent. This fact was pointed out by the National Heating and Airconditioning Wholesalers. Additions to the work force have been limited by the low birthrate in the 1930's and also by the fact that young people are spending more time in school. This trend will be reversed by 1960 when the increased birthrates during the war years will be reflected. The NHAW states that under current conditions those who are working will have to take home more money to support the larger population or else living standards will deteriorate.

(Coming Events on page 118)

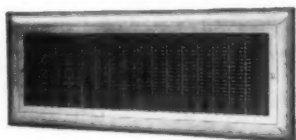
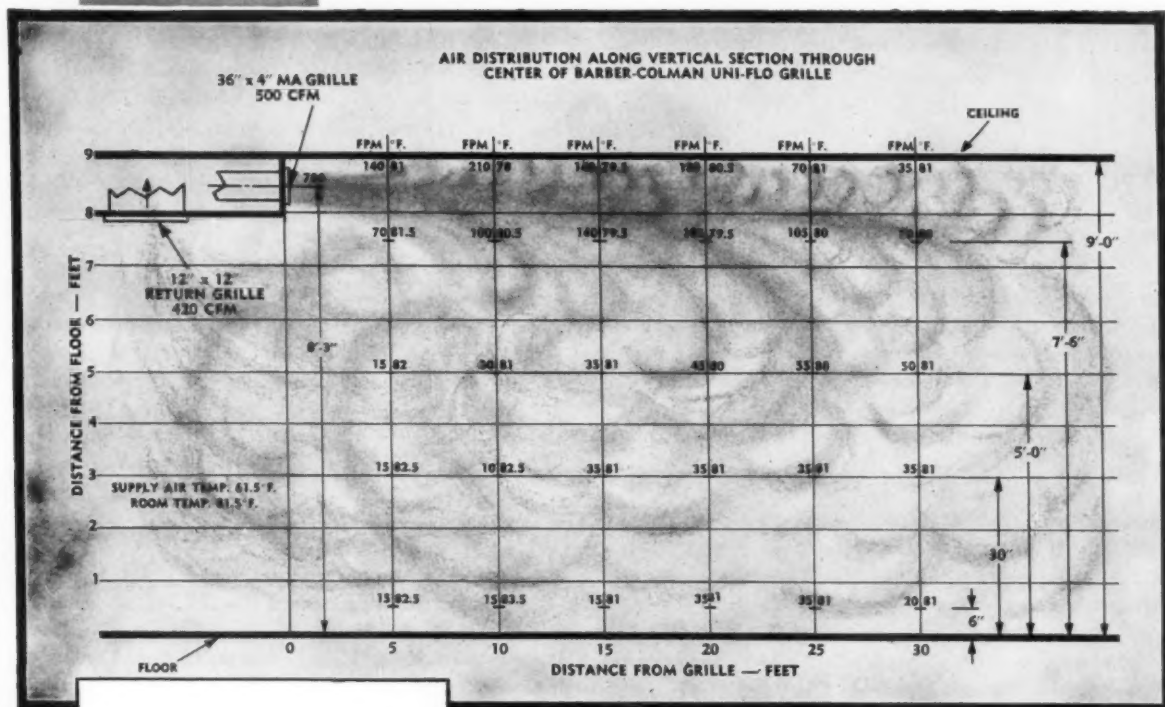
THE MARK OF QUALITY



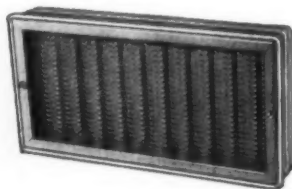
Uni-Flo

ENGINEERED AIR  
DISTRIBUTION

# predict and deliver air patterns like this...



Model MA  
Double-Deflection Grille



Model FA  
Double-Deflection Grille

Precision distribution of conditioned air from sidewall grilles is no problem when you specify Uni-Flo. Uni-Flo Grilles are true sidewall diffusers, designed to give adjustable air pattern and rapid diffusion without air stream drop or excessive air motion. Laboratory-tested, field-proved performance data permit the engineer to create required conditions without guessing. Variety of types available. For complete details, call your nearby Barber-Colman Field Office, or write . . .

**BARBER-COLMAN COMPANY**

Dept. U, 1106 Rock Street, Rockford, Illinois

Field Offices in principal cities



# There's Money In Conversion Burners

## WHEN YOU INSTALL *Norman*®



**NORMAN NP-3**  
available in models  
from 50,000 to  
300,000 BTU,  
for natural, mixed  
or LP gas.

- ✦ Norman is the simplest burner on the market to install.
- ✦ Norman has a wide variety of inshot and upshot models for all types of residential, commercial and industrial applications.

There are some mighty good profits waiting for you this year in the conversion burner market—but to make sure you make the most money—be sure to promote the famous Norman Conversion Burner.

Compare Norman with any other burner and you will see why it is the answer to immediate profits. Norman gives you more to sell . . . gives you more in profits with easier, quicker installations . . . lets you keep more because it assures trouble-free operation year in and year out.



**NORMAN  
INDUSTRIAL-COMMERCIAL  
MODELS**

— available with inputs  
from 500,000 to  
2,000,000 BTU.

Mail coupon today for complete  
information and prices on  
**NORMAN CONVERSION  
BURNERS**

*Norman*®

products  
company



- ✦ Norman is trouble-free . . . performance proved in over a quarter of a million homes.
- ✦ Norman's improved principle of burning gas gives single flame economy.
- ✦ Norman can be equipped so no electricity is required.
- ✦ Norman fits any size or shape of round or rectangular furnace or boiler.
- ✦ Norman is backed by a 10 year warranty.

NORMAN PRODUCTS CO.

1164 Chesapeake Ave., Columbus 12, Ohio

Please rush complete information and prices on Norman Conversion Burners.

NAME \_\_\_\_\_

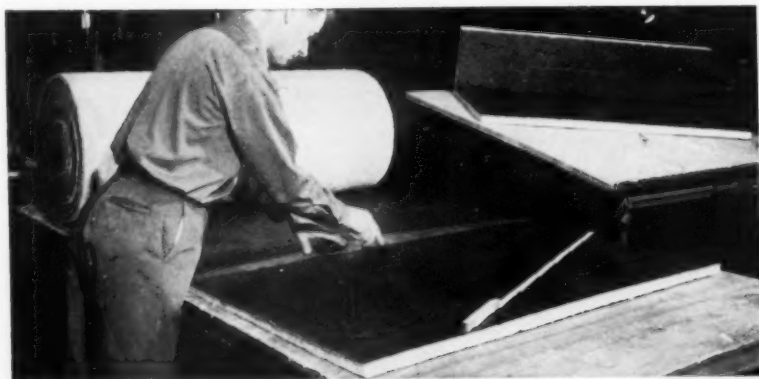
FIRM NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

Cut costs on heating, air-conditioning duct-liner installations:

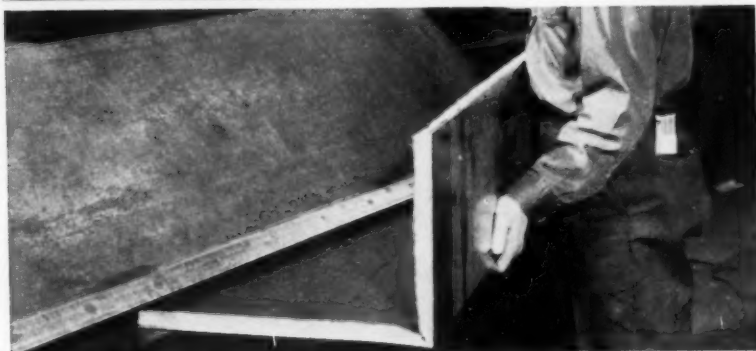
## Fabricate ducts fast with black-vinyl-coated MICROTEX



### A.

Just cut Microtex to fit the flat metal sheets . . .

L·O·F Glass Fibers' Microtex Duct Liner cuts easily with knife or scissors . . . requires no special tools or skills. Pigmented vinyl shows it's *fully coated* . . . *quality-made* to resist air erosion, even at peak velocities. Black vinyl also tells at a glance which side faces the air stream.



### B.

...then quickly form in the brake with the metal.

Microtex Duct Liner is strong and resilient . . . can be formed in the brake without damage. This fine glass fiber insulation easily withstands routine shop handling. It's semirigid, yet light in weight . . . pleasant to handle, quickly and economically installed.



### C.

Prelined ducts save money . . . satisfy customers.

Black-vinyl-coated Microtex saves the cost of painting inside finished ducts, near grilles or large registers. And its black vinyl coating eliminates paint flaking into the air stream after installation, such as might happen with other duct liners.

**New Microtex Duct Liner offers maximum insulation per dollar —**

L·O·F Glass Fibers' Microtex Duct Liner serves a dual purpose: it minimizes mechanical noises efficiently; and it insulates warm- and cold-air ducts against heat transfer. When ducts are lined with Microtex, the sheet metal itself acts as a vapor barrier.

Your nearest distributor gives fast delivery on low-cost Microtex Duct Liner in  $1\frac{1}{2}$ , 2 and 3 lb./cu. ft. densities, and in standard widths and thicknesses. For his name, write: L·O·F Glass Fibers Company, Dept. 45-97, 1810 Madison Avenue, Toledo 1, Ohio.

**L·O·F GLASS FIBERS COMPANY • TOLEDO 1, OHIO**



the quality tells... the quality sells

*new* **JANITROL**

**OIL-FIRED WINTER AIR CONDITIONERS**



**QUIET...CLEAN...CAREFREE**

Convertible to gas — adaptable for  
Janitrol ADD-ON summer cooling



**Here today...  
Here to stay  
for  
JANITROL®  
dealers!**

THE

# Golden Key TO PROFITS

**in oil winter conditioners**

**with JANITROL'S 7-point program for sales**

## 1 First really Q-U-I-E-T line of oil-fired winter conditioners in the industry!

It's a revelation when you switch on a new Janitrol oil-fired winter air conditioner. You'll scarcely notice when its powerful Jet-O-Mizer hi-pressure burner and floating blower and motor go into action. Here's quietness that sells for you!

And, while superb, engineered-quiet headlines the sales appeal built into every new Janitrol oil-fired winter conditioner, it's by no means the whole story.

There's compact, space-saving new design all through the line, that includes high-boy, low-boy and down-flow models. There are beautifully styled insulated cabinets and adjusto-bolts for easy leveling on low-boy models. There's the famous Janitrol heating heart of tempered-tough welded 14 ga. steel. All models are readily adaptable for summer cooling.



This new Janitrol Low Boy is styled to steal sales from your competition. Like all Janitrol oil conditioners, it is easily converted to gas; engineered for efficient operation with companion cooling unit.

This great new Janitrol oil conditioner line is just one of seven big advantages Janitrol offers to give you the GOLDEN KEY TO PROFITS in oil-conditioner sales! Read about the rest of them *right now!*

### JANITROL HEATING AND AIR CONDITIONING DIVISION Surface Combustion Corporation, Columbus 16, Ohio

Please show me how Janitrol's 7-point program for **SALES** can give me the GOLDEN KEY TO PROFITS. **In Canada: Moffats, Ltd., Toronto, 15**

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_

STATE \_\_\_\_\_

OIL \_\_\_\_\_

**Fill in and MAIL TODAY!**

## 2 new, low trade net prices

Advanced Janitrol engineering—new automated production methods—volume building sales leadership—all add up to more profits on every sale. This new Janitrol pricing plan lets you move in on competition with top-quality Janitrol products at *really competitive prices!*

## 3 new dealer stocking plan

As a Janitrol dealer qualified under this new plan, you'll keep your working capital *working*, instead of "freezing" it in inventory. You'll have the inventory you need for prompt deliveries, better service, year 'round.

## 4 new retail customer finance plan

Makes Janitrol cooling and heating easily available to the six out of ten families who haven't the cash but have the credit . . . on easy installment terms. No down payment. Up to three years to pay. Finance up to \$3500. No risk or recourse to dealer, no collection problems. Eliminates red tape and delay. Keeps "hot" prospects from cooling off!

## 5 new local level promotions — to the rich modernization market

A high-impact, sales-producing merchandising program created by Janitrol for your needs, your market, your profit ambitions! Newspaper ads, radio and TV musical announcements, window and in-store displays, color-illuminated outdoor signs—all yours as a qualified Janitrol dealer. And Janitrol sets up the complete program to the last detail, saves your time for selling.

## 6 new builder promotion package

A complete merchandising program to help you snare your share of the new house market. Chock full of tested promotion ideas that give you a running start on competition—let you offer the builder a service that enables him to upgrade his houses with quality Janitrol equipment, appeal to more prospects, *stay competitive!*

## 7 new select dealer program

Today, Janitrol recognizes a new era in company-dealer relations. The days of "playing it by ear" are no more. There's a need for continuing close cooperation between both parties—an "open door" for exchange of ideas. The Janitrol Select Dealer Program makes these things possible, and gives you extra benefits besides. Business development counsel, training schools, prizes, vacations, to mention a few. Right now's the time to qualify!

get your *Golden Key* TO PROFITS  
with **JANITROL®**

**Ask your JANITROL representative for  
the facts or RUSH THE COUPON TO US!  
NO OBLIGATION!**

Complete line of gas and oil furnaces, unit heaters, conversion burners, water cooled and air cooled summer conditioners, combination heating-cooling conditioners.



## PLUMBING, HEATING CONTRACTORS!

There's a lot of useless back-breaking digging involved in uncovering new construction business . . . unless you have someone breaking ground for you . . .



## We help do your spadework for finding business

Trying to uncover new construction business by looking everywhere is the costly way to get the jobs you want. The best, most economical method is to let Dodge Reports pin-point exactly the kind of construction activity you're looking for right in the area you serve. If you'd like to see how this timely, accurate daily report service can get you more and better business, just read, then mail this coupon today.

TO: **DODGE REPORTS**, DEPT. 167, 119 WEST 40th STREET, NEW YORK 18, N. Y.

Yes! I'd like to see how to get more business by knowing in advance who's going to build, what, when, where.

I want to know whom to contact and when to submit bids.

I'd like to see some Dodge Reports, and I'd like a copy of your booklet that tells how to use this accurate, daily, up-to-the-minute construction news service.

I understand that I can pick just the area in the 37 Eastern States and the type of construction activity that interests me. Also, that I won't have to wade through mounds of data to find the information I need.

I'm interested in General Building ☐ House Construction ☐ Engineering (Heavy Construction) ☐

in the Following Area: \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_





IN CITY AFTER CITY, YEAR AFTER YEAR

**It's AMERICAN ARTISAN Readers\* who Dominate in Residential Air Conditioning**

\*Key warm air heating and sheet metal contractors.

Don't just take our Research Department's word for it — or anybody else's. Check around right in your own "backyard."

You'll confirm that, despite claims and counter-claims from others, it's the better Warm Air Heating-Sheet Metal dealers who are selling and installing the bulk of the Residential Air Conditioning.

So what can WE do for you? Simply this: American Artisan's editorial, circulation, and advertising leadership is based on an all-important factor — the KEY dealer. 75 to 80% of the total business in Warm Air Heating, Residential Air Conditioning, and Sheet Metal Contracting is done by 20 to 25% of the dealers. These are the KEY dealers — and American Artisan has them as PAID readers. They are the major buying influences and the major selling influences.

Reaching them in the pages of American Artisan is a basic part of your sales program.

## **AMERICAN ARTISAN**

AIR CONDITIONING HEADQUARTERS

KEENEY PUBLISHING CO.

6 N. Michigan

Chicago 2





*Stainless Steel  
machining information...*

## **\*Use a heavy cut, but slow**



**M**ACHINING Stainless Steel isn't difficult—but it's *different*. Most grades of Stainless should be machined at about *half* the speed of carbon steel. This stems from the fact that Stainless is tough, rather than hard, and it tends to seize and gall at higher tool speeds.

Sharp tools are *essential*, especially for austenitic (300 series) Stainless Steels. Dull tools will work-harden and glaze the piece. In fact, the work-hardening may be so bad that future cutting will actually be impossible. A heavy, slow cut will give the best results with almost any grade of Stainless.

Trial and error is *not* the best way to master Stainless Steel machining. We suggest that you refer to U. S. Steel's "Stainless Steel Fabrication Book" for service-tested fabricating ideas. If you don't have a copy of this 130-page book, write for it on your company letterhead to United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

UNITED STATES STEEL CORPORATION, PITTSBURGH  
AMERICAN STEEL & WIRE DIVISION CLEVELAND  
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO  
NATIONAL TUBE DIVISION, PITTSBURGH  
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.  
UNITED STATES STEEL SUPPLY DIVISION,  
WAREHOUSE DISTRIBUTORS  
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

**USS  
STAINLESS  
STEEL**

SHEETS • STRIP • PLATES • BARS • BILLETS  
PIPE • TUBES • WIRE • SPECIAL SECTIONS

**UNITED STATES STEEL**





The sign of smooth  
sale-ing . . . **SKUTTLE**



brings you **NEW**  
**supplemental heating**  
**at its best**

Here's a brand new product line from Skuttle, designed to give you ready-made profits. **SKUTTLE-DIMPLEX** Electric Radiant Heaters are fully guaranteed for **TWO YEARS . . .** You have no service worries when you sell a **SKUTTLE-DIMPLEX!**

Available in 500, 750 and 1000 watt models, either with casters or feet, the **SKUTTLE-DIMPLEX** heaters are loaded with sales features . . . **Portability with Plug-in convenience**—Operates off normal house current and voltages. **Radiant Heat**—Slimline design provides maximum heating surface on both sides. **Maintenance-Free Operation**—No moving parts to wear out or service. **Thermostatically Controlled**—Provides desired room temperature control automatically. **Completely Safe**—Maximum surface temperature of 190° assures burn-and-scorch free operation. **Safety Cut-off**—Automatically assures full protection under any abnormal operating condition.

**EXCLUSIVE DISTRIBUTION**—Guaranteed and sold exclusively in the United States by

**Skuttle**

**MANUFACTURING CO.**  
**MILFORD, MICH.**



ELECTRIC RADIANT HEATERS



PLUG-IN HEATERS



PERMANENT FILTERS

## Coming Events

**1957**

**October**

Oct. 7-9 — American Gas Association, annual convention. Kiel Auditorium, St. Louis, Mo. C. S. Stackpole, managing director, 420 Lexington Ave., New York 17.

**November**

Nov. 14-16 — American Society of Refrigerating Engineers, semiannual meeting. Shoreland Hotel, Chicago. R. C. Cross, executive secretary, 234 Fifth Ave., New York 1.

Nov. 18-20 — National Heating & Airconditioning Wholesalers, Inc., annual convention. Hotel Morrison, Chicago. W. R. Bull executive director, 1200 W. Fifth Ave., Columbus, Ohio.

Nov. 18-21 — Air-Conditioning and Refrigeration Industry, 10th exposition, International Amphitheater, Chicago. Air-Conditioning and Refrigeration Institute, 1346 Connecticut Ave., N.W., Washington 6, D.C.

Nov. 19-20 — National Warm Air Heating and Air Conditioning Association, board and committee meetings. Hotel Morrison, Chicago. George Boeddener, managing director, 640 Engineers Bldg., Cleveland 14.

Nov. 21-22 — National Warm Air Heating and Air Conditioning Association, annual convention. Hotel Morrison, Chicago. George Boeddener, managing director, 640 Engineers Bldg., Cleveland 14.

**1958**

**January**

Jan. 19-23—National Association of Home Builders, annual exposition. Conrad Hilton and Sherman Hotels and the Coliseum, Chicago. John M. Dickerman, executive director, 1625 L St., N.W., Washington 6, D.C.

Jan. 27-29 — American Society of Heating and Air-Conditioning Engineers, 64th annual convention, Pittsburgh, Pa. A. V. Hutchinson, executive secretary, 62 Worth St., New York 13.

**February**

Feb. 2-5 — New York State Sheet Metal, Roofing and Air Conditioning Contractors' Association, annual convention. Van Curler



## Coming Events

Hotel, Schenectady, N.Y. Clarence J. Meyer, executive secretary, 569 Genesee St., Buffalo 4, N.Y.

Feb. 6-7—Sheet Metal and Warm Air Heating Contractors' Association of Indiana, 40th annual convention. Hotel Severin, Indianapolis, Ind. F. E. Anderson, executive secretary, 439 S. 17th St., Terre Haute.

Feb. 10-12 — Sheet Metal Contractors Association of Illinois, annual convention. Pere Marquette Hotel, Peoria. Jay E. Harms, secretary, 1619 N. Sheridan Rd., Peoria.

Feb. 17-20 — Seventh Annual Industrial Ventilation Conference. Kellogg Center, Michigan State University, East Lansing, Mich. James C. Barrett, Michigan Dept. of Health, Lansing 4, Mich.

Feb. 20-22—Sheet Metal and Roofing Contractors' Association of Minnesota, annual convention. Hotel Duluth, Duluth. Richard Grant, executive secretary, 867 Grand Ave., St. Paul 5, Minn.

### March

Mar. 3-5—Ohio Sheet Metal Contractors' Association, annual convention. Commodore Perry Hotel, Toledo. Don Dieterle, chairman, 2112 Maplewood, Toledo 6.

Mar. 10-12—Sheet Metal Contractors' Association of Wisconsin, annual convention. Hotel Schroeder, Milwaukee. Robert S. Schmieder, executive secretary, 8320 W. Bluemound Rd., Milwaukee.

Mar. 27-30 — Southeast Trade Exposition sponsored by Sheet Metal, Roofing, Heating, Air Conditioning Contractors' Association of Georgia. Atlanta Biltmore Hotel, Atlanta, Ga. B. L. Noblitt, executive secretary, P. O. Box 1196, Augusta, Ga.

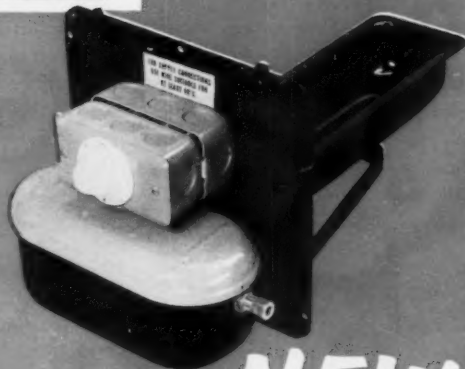
Mar. 31 — Apr. 2 — Gas Appliance Manufacturer's Association, annual meeting. The Greenbrier, White Sulphur Springs, W.Va. H. Leigh Whitelaw, managing director, 60 E. 42nd St., New York 17.

### May

May 8-10 — Sheet Metal and Air Conditioning Contractors' National Association, Inc., annual convention. Eden Roc Hotel, Miami Beach. Joseph D. Wilder, executive secretary, 170 Division St., Elgin, Ill.



The sign of smooth  
sale-ing . . . **SKUTTLE**



brings you **NEW**  
**automatic humidification**  
**at less cost**

With the introduction of the Model 800 Humi-dial, Skuttle offers automatic humidification at a new, low cost. Here is the electric humidifier for the mass market, with all the capacity of the most expensive unit . . . 24 quarts of water a day . . . but with a price tag that invites comparison!

The Skuttle Humi-dial eliminates the humidistat and relay transformer—is adjusted for proper degree of humidification right at the humidifier. From this point on the operation of the Humi-dial is basically the same as the proven Model 400 Humidimatic. Vapor is produced independent of the heat from the plenum by the use of a 625 Watt element in the water pan. The Model 800 is also equipped for automatic water feed. A new, improved water feeder regulates a constant water volume.

Stock the new Skuttle Humi-dial now and profit from increased automatic humidifier business.

**Skuttle**

**MANUFACTURING CO.**  
**MILFORD, MICH.**



ELECTRIC RADIANT HEATERS



HUMIDIFIERS



PERMANENT FILTERS

# EQUIPMENT DEVELOPMENTS

The latest information on manufacturers' developments is presented here with brief summaries of the applications of these products. For additional product information which is available, see this month's New Literature department

## Built-in Furnaces

"SEVENTIETH ANNIVERSARY" line of gas-fired furnaces designed for built-in or flush-mounted installation anywhere in the home, and styled to blend with modern decor—*Perfection Industries Div., Hupp Corp., Dept. AA, 1135 Ivanhoe Rd., Cleveland 10.* Six models range from 75,000 to 200,000 Btu. Insulating principle permits air to be returned from bottom, back or either side; unit can be installed with zero clearance



at sides and back, the company reports. Duct work, piping and wiring can be hidden. Three stage fire principle provides moderate fire for mild weather, high fire in cold weather. Modular heat exchangers each represent 25,000 Btu capacity; insulating principle using aluminum finish metal baffle radiates heat back into furnace. Other features are: cast iron raised port burners with cross-over ports; no-lint pilot burner using no primary air; 100 percent gas shutoff; white baked enamel bottom panel and aluminum finish expanded metal grille with chrome trim.

## Gas Water Heater

"REX VICTOR" automatic gas-fired water heaters in 30 and 40 gal sizes with choice of galvanized or glass lined tank—*Cleveland Heater Co., Dept. AA, 2310 Superior Ave. N.E., Cleveland 14, O.* Featured are copper-bearing steel tank, safety shutoff, stainless steel pilot burner. The 30 gal size, with 30,000 Btu input, will recover 25.2 gph at 100 F rise on natural, manufactured or mixed g's and 23.1 gal on LP gas; the 40 gal model, with 32,500 Btu input, recovers 27.3 and 23.5 gph, respectively. The 40 gal model is 60½

in. high, 20½ in. in diameter; the 30 gal size is 56¾ in. high and 18¾ in. in diameter, according to the manufacturer.

## Round Switch-Back Thermostat

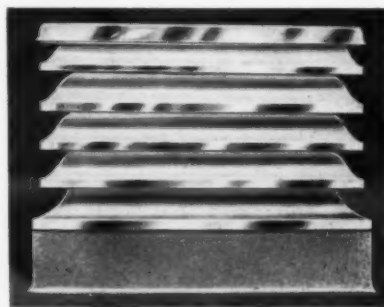
"DAY-NITE" MODEL T832 round thermostat which provides for adjustment of spring-wound timer to assure lowered temperature with automatic heat pickups



at any desired hour—*Minneapolis-Honeywell Regulator Co., 2726 Fourth Ave. S., Minneapolis 8, Minn.* Provision is made for switch-back of heat in quarter-hour increments up to 10 hr. Round shape blends with contemporary or traditional settings; bronze outer ring can be painted to match room decor. Mercury switch is enclosed and dust-free, the company reports.

## Extruded Aluminum Louvers

LINE OF EXTRUDED aluminum outside louvers with S-shaped blade designed for greater free area while retaining characteristics necessary for weatherproofness—*Titus Mfg. Corp., Dept. AA, Box 810, Highway*

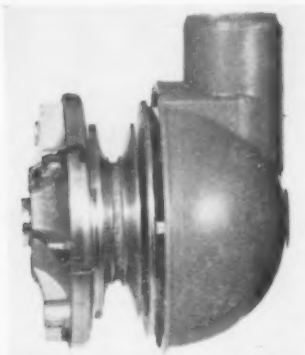


20 West, Waterloo, Ia. Designed for use in any exterior wall opening where continuous flow of supply

or exhaust air is desired, louvers are made of extruded 12 ga aluminum sections with longitudinal reinforcing beads. Louvers are available in any width or length, in any finish, the company reports. Louvers are featured in company's extruded aluminum penthouse designed for intake or exhaust unit for handling ventilation through the roof.

### Blower Speed Modulator

"PALM BEACH Comfort Control" system designed to modulate speed of furnace blower in direct proportion to the temperature in warm air plenum—*National Modulation Co., Dept. AA, 2720 N. Highway 61, St.*



*Paul 9, Minn.* Unit is engineered to gear heating system for all weather and supply continuous air circulation. Pulley flange has been added to keep dirt and oil from clutch surface. Bimetal power element is said to provide more power and faster action.

### Electronic Air Cleaner

MODEL HCC (high capacity cell) electronic air cleaner said to clean 350 to 600 cfm of air per sq ft of gross face area at efficiencies from 97 to 85 percent—*Trion, Inc., Dept. AA, 1000 Island Ave., McKees Rocks, Pa.* Duct area has been reduced one-third and system layout streamlined, the company reports. Units are equipped with motorized moving cold water washer and adhesive applicator. Range of sizes is designed for any application.

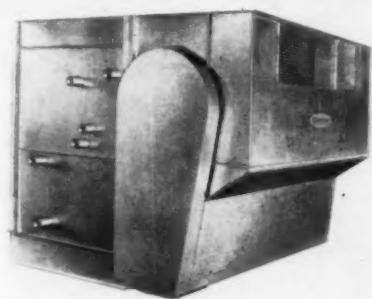
### Dual Action Electric Drill

"UNI-DRILL" selective action  $\frac{1}{4}$  in. electric drill which combines regular drilling action with pneumatic impact action—*Power Tools Corp., Dept. AA, 1421 Lakeside Ave., Cleveland 14.* Unit is rated at 3 amps, will take up to 1 in. carbide masonry drill bits, has 2500 rpm speed (1700 rpm under load). Unit weighs 5.75 lb, requires 15 lb pressure to drill at normal rate. Selector control turns to release internal impact cam, allowing it to float for conventional drill action. Two double cams and 30 lb pre-loaded spring provide im-

pact action. Power developed is measured at 90,000 impact lb per min, according to the company.

### Evaporative, Air Cooled Condensers

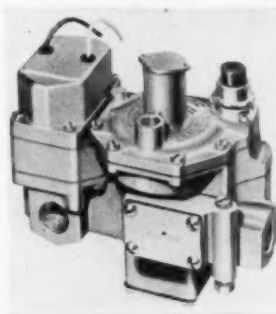
EVAPORATIVE CONDENSER in 13 sizes from 5 tons up, and air cooled condenser in seven sizes from 2 tons up—*Carrier Corp., Dept. AA, 300 S. Geddes St., Syracuse 1, N.Y.* Evaporative model employs method of wetting coils with vaporized water drawing heat



from refrigerating system. Water is delivered by small recirculating pump through orifice holes in drawer-like pan at top of unit, onto interceptor screen where water is broken into droplets, thoroughly drenching coil surfaces. Air cooled model has smooth helical aluminum fins on copper tubes, spaced 14 per in. Airway depths of 3, 4, 5 or 6 rows of coils are available. Fan is centrifugal type. Both models are designed for commercial application, the company states.

### Furnace Gas Control

MODEL 5250 self-contained gas control for 75,000 to 180,000 Btuh furnaces—*A-P Controls Div., Controls Co. of America, Dept. AA, 2450 N. 32nd St., Mil-*



*waukee 45.* Unit features quiet operation, 100 percent safe lighting and shutoff, the company states. Control may be used with all gases and can be mounted without changes to any gas-fired unit. Pilot adjustment modulates pilot flame to suit equipment needs. Built-in pilot filter removes gas impurities. Unit is available in range of inlet and outlet sizes with right, left or straight-through outlets optional.

# Two Ways to Bigger Profits!

Sell the People's Choice!



## Federal Filter

Look at these unsurpassed benefits. Federal's 16 extra-large filter pockets trap the contaminating impurities found in fuel oil and prevent clogging of burner nozzles. This means trouble-free furnace operation and the end of expensive service call-backs. One model handles all filtering jobs, whether pressure or gravity type.

## Draft King

Look at all these money-saving features! Draft King turns flue gases into perfect heating combustion, not chimney clogging soot. Maximum draft provides full burning benefit of fuel and eliminates costly fuel waste so common with poor chimney drafts. Made of either all-weather galvanized steel or aluminum.



Show them, talk about them, sell them  
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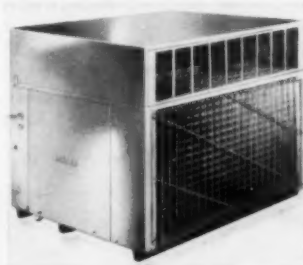
for information write to  
**NORWOOD PRODUCTS CO. • LUVERNE, MINN.**

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## equipment developments (Continued)

### Air Cooled Unit

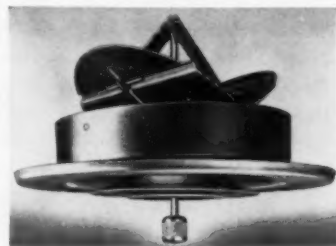
FOUR-TON capacity air cooled remote cooling unit, designed to fill the gap between 3 and 5 ton models—Len-



nox Industries, Inc., Dept. AA, 200 S. 12th Ave., Marshalltown, Ia. With 95 F air over condenser, Btuh capacities are 48,000 or 41,700, depending on evaporator size, the company states. With special discharge hood, condenser air is discharged on same side as air intake; discharged air is deflected upward so as not to recirculate through condenser coil. Discharge hood is acoustically lined, the company reports.

### Ceiling Diffuser

No. 200 ROUND CEILING diffuser with friction-controlled butterfly damper—Krueger Air Conditioning Corp.,



Dept. AA, 19 E. Rillito, Tucson, Ariz. Central shaft with knurled handle gives full 90 deg control of both butterfly damper leaves by pushing or pulling the shaft to desired control position. Leaf spring exerts constant tension against the shaft to maintain friction control of adjustment in all positions. Diffuser is in 6 to 14 in. diameters with 360 deg diffusion pattern.



# PENN



Note roomy interior and clean, uncluttered design of Type 682 for intermittent ignition. Type 680 is for continuous ignition.



## OIL BURNER CONTROL

with low voltage protection plus automatic recycling!

### additional features you'll like...

- Easier to wire . . . extra ground terminal.
- Extended time-ignition period.
- Sealed safety and ignition time mechanisms.
- Protection against low voltage.
- Unusually compact . . . easily adapts to small or large diameter stacks and limited mounting spaces.
- Extra sturdy, durable enclosure with long-lasting, attractive finish.
- Easily accessible finger-tip control of air adjustment.
- Plus many more you'll appreciate.

Here's a Stack Control that combines in one unit *all* the important oil burner control features known today! It has low voltage protection . . . automatic recycling with timed purge period . . . plus many more that assure dependable and safe performance for years and years.

Distinctively styled, the Penn Stack Control is *smaller outside yet roomier inside*. It is built for use on continuous or intermittent ignition residential oil burners and small commercial jobs. It is easily mounted in the stack, heat exchanger or suitable location where temperatures will not exceed 1,000° F.

Try the Penn Stack Control on your next heating job . . . you'll discover that your customers are more satisfied . . . that costly, profit-eating service call-backs are a thing of the past . . . that you'll sell more, make more!

Learn more about this oil burner control that "stays on the job" longer. Ask your wholesaler, burner manufacturer or write Penn Controls, Inc., Goshen, Indiana.

AND THERE'S MORE FOR YOU

## PENN'S NEW RIMSET ROOM THERMOSTAT



...has that "Fine Instrument" feel,  
look, quality, performance and is

## TODAY'S EASIEST-TO-READ THERMOSTAT



The adjustable heat anticipator and  
all wiring is on sub-base where large  
terminals are easily accessible.

Never before have so many selling advantages been put into one room thermostat. It has everything to make your customers "buy" and keep them "sold"!

It adds beauty to any room with a distinctive look that's at home in any home. It maintains true living comfort with accurate regulation of indoor temperatures. It gives new convenience with the RIMSET dial. Just dial the rim to temperature desired . . . the extra large dial face remains stationary to make it today's easiest-to-read thermostat!

And, with the Penn RIMSET, various sub-bases are available for cooling, heating or any combination . . . the RIMSET thermostat unit fits them all! Thus, if cooling is added later to a heating installation . . . simply change the sub-base and use the same thermostat. There are many more selling advantages. Investigate Penn Controls . . . they "stay on the job" longer.

### PENN CONTROLS, INC.

Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

## equipment developments

(Continued)

### Galvanized Round Duct

SNAP-LOCK galvanized furnace duct in 10 ft lengths—*Excelsior Steel Furnace Co., Dept. AA, 546 W. Washington Blvd., Chicago 6.* Designed for perimeter and



crawl space installations, duct is in 4, 5 and 6 in. diameters in 30 ga, and 6, 7 and 8 in. diameters in 28 ga. Hand pressure alone is said to lock joints securely.

### Air Mixing Unit

TYPE H ALL ALUMINUM air mixing unit for dual duct high velocity systems—*Buensod-Stacey, Inc., Dept. AA, 45 W. 18th St., New York 11.* General purpose unit is adaptable for overhead distribution of air through standard diffusers, grilles or other types of outlets. Unit is in five sizes with capacities ranging from 70 to 800 cfm.

### Emergency Damper Opener

"SAFETY VENT" emergency damper opener designed as fire safety factor for one-story buildings utilizing sprinkler systems—*Chicago Blower Corp., Dept. AA, 9867 Pacific Ave., Franklin Park, Ill.* Heat-actuated unit is controlled by single spring located outside the air stream of the fan and held in place by fusible link. Completely independent of fan operations, unit allows smoke and fumes to escape.



### Portable Humidifier

"FRESH'ND-AIRE" portable electric humidifier said to wash, filter and humidify up to 6000 cu ft of air per

## GUARANTEED

... not for 5 years, not for 10 years  
... not for 15 or 20 years, but

# UNCONDITIONALLY GUARANTEED



# ...FOR LIFE!

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Zeph-Air is the gas furnace with the cast-iron heart. The entire heating element is unconditionally guaranteed — for LIFE!

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Write today to see if a franchise is open for you. We'll give you the details you need and want — no obligation, of course. We'll also be pleased to furnish complete information on our air conditioning units for use with our heating equipment.

## XXTH CENTURY

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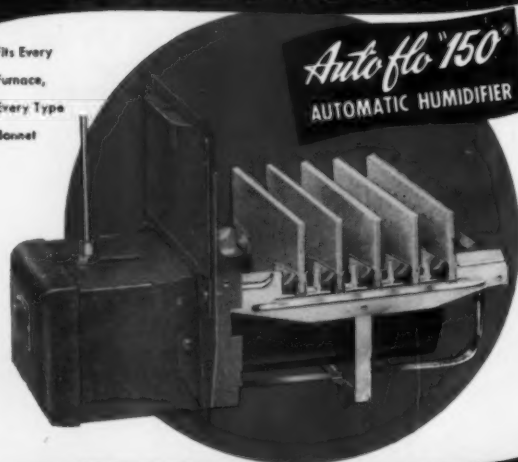
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**AUTOMATIC HUMIDIFIER**  
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water faster . . . evaporate more  
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prevent drip.

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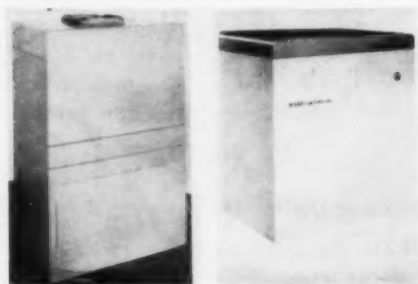
## equipment developments

(Continued)

hour—Cory Corp., Dept. AA, 3200 W. Peterson Ave.,  
Chicago 45. Finished in brown and beige, unit filters  
dust, lint, pollen, smoke and dirt from the air, the  
company states.

## Remote Location Heat Pump

TWO-PACKAGE heat pump unit consisting of outdoor  
reversible cycle and indoor blower coil unit said to  
occupy 1/5 to 1/4 the inside space required by previ-  
ous self-contained models—Westinghouse Electric



Corp., Air Conditioning Div., Dept. AA, Staunton,  
Va. Designed primarily for counterflow application,  
indoor section provides three kinds of air flow sys-  
tems, permitting attic, crawl space or utility room  
installations.

## Fan, Limit Switch

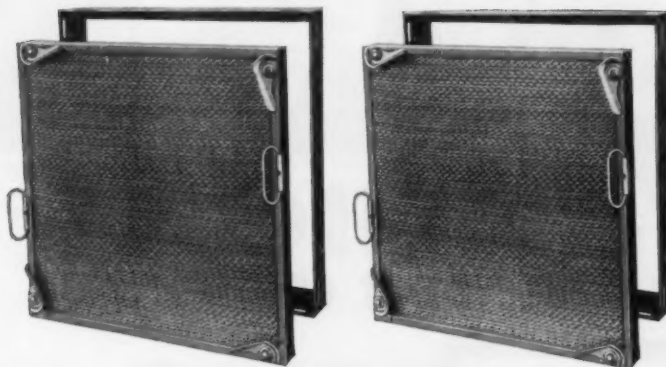
MODEL 3AHL5 fan and limit switch for gas- or oil-  
fired heating systems, said to be 50 percent smaller  
than previous models—General Electric Co., Appliance  
Controls Dept., Dept. AA, 1 River Rd., Schenectady



5, N.Y. Bimetal elements are completely exposed. Ad-  
justable limit knob is available in addition to ad-  
justable "fan off" setting. Unit triggers fan when bon-  
net temperature is about 20 deg higher than tempera-  
ture setting on "fan off" scale; fan is stopped when  
bonnet temperature falls below this setting. Limit  
switch shuts burner off before bonnet temperature  
exceeds safe value. Manual "fan on" position is for  
controlling ventilation in summer.



# THESE **2** UNIT FILTERS



# WILL DO THE WORK OF **3** STANDARD UNITS!

**That's because they're AAF filters!**

Operating at a nominal face velocity of 500 fpm, a 20 x 20" HV-2 unit filter has a capacity rating of 1200 cfm. This gives two of these AAF filters the capacity of three standard units . . . in 1/3 less space!

Each HV unit contains 4 1/2 miles of woven-wire media. That's sixty lineal feet of wire in every square inch of face area. And this wire is

formed into dust-trapping pyramid pockets that assure (1) large dust capacity, and (2) no "unloading" of collected dust.

And this high-velocity, washable filter maintains uniform efficiency over a range of velocities from 300 to 500 fpm! Get all the facts from your local American Air Filter representative or write direct for Bulletin No. 203.

**AAF** **American Air Filter**  
COMPANY, INC.



355 Central Avenue, Louisville 8, Kentucky  
American Air Filter of Canada, Ltd., Montreal, P. Q.

AAF Dust  
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AMERglas Replaceable  
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Herman Nelson  
Propeller Fans

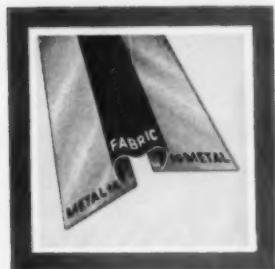


Herman Nelson  
Unit Blowers

# DURO

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## "JUNIOR" FLEXIBLE DUCT CONNECTORS



Lowest cost, pre-assembled flexible duct connector for residential installations.  
Dimensions: Metal 2"; Fabric 1 3/4"; Metal 2".

Think of it! Vibration noise can now be eliminated for less than \$2.00 per installation! Duro-Dyne's "Junior" Flexible Duct Connector does it.

And it provides all these important advantages as well:

- Pre-assembly permits fabrication 3 times faster than conventional methods! Cut it . . . fold it . . . install it!
- Exclusive Double-Loc seam assures that metal and fabric will not part even under severe braking.
- Fabric is U. L. approved canvas or asbestos.
- Unique, easy-to-handle dispensing cartons carry 50 feet or 100 feet coils.
- Fabric seam closes quickly and positively with Duro-Stapler.
- Meets Federal specification CCC-D-746 and Military specifications MIL-D-10860.

Your local Duro-Dyne distributor can give you a complete demonstration quickly. Call him today. You will spend a very profitable 30 minutes. Or write now for a sample of "Junior" and the name of your local supplier.

*The greatest name in sheet metal specialties*

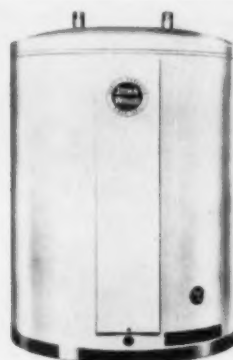


**DURO-DYNE CORP., 800 Third Ave., New Hyde Park, N. Y.**  
CANADIAN DISTRIBUTORS: Douglas Engineering Company, Ltd., Montreal and Toronto  
E. H. Price, Ltd., Winnipeg and Vancouver

### equipment developments (Continued)

#### Counter Water Heater

AUTOMATIC ELECTRIC model water heater in 30 gal capacity, designed for under counter or free standing installation—John Wood Co., Dept. AA, Heater & Tank Div., 100 Washington St., Conshohocken, Pa. Unit



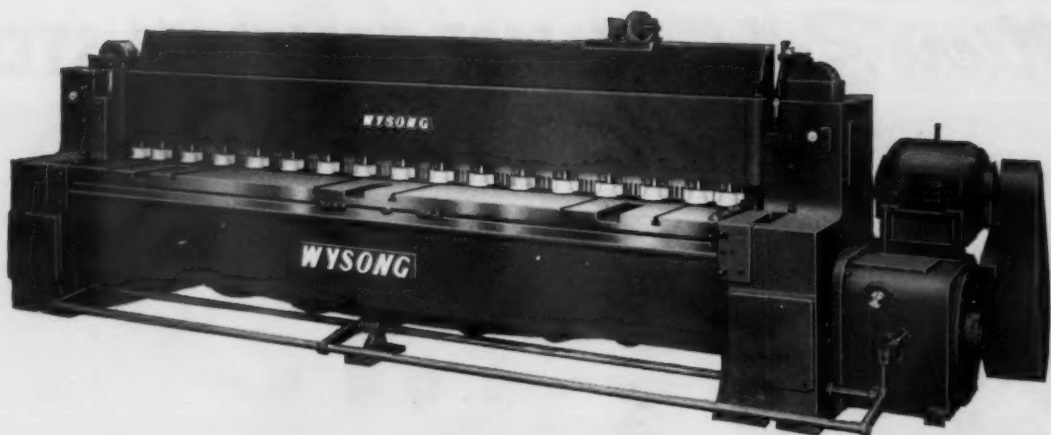
fits into 20 1/2 × 20 1/2 in. area. Water connections, in top of unit, are accessible from either side. Galvanized tank is equipped with 3-section magnesium anode mounted through front of heater. Thermostat is bi-metal surface type.

#### Oil-Fired Furnace

OIL-FIRED floor furnace designed with a shallow well—H. C. Little Burner Co., Dept. AA, Woodland Ave. & Du Bois St., San Rafael, Calif. Burner uses no. 2 fuel oil. Unit is available with thermostatic control and is self-lighting, according to the manufacturer.

#### Condensing Units

"BLU-COLD" hermetic condensing unit in 3/4 to 2 hp range—Lehigh Mfg. Co., Dept. AA, P. O. Box 1418, Lancaster, Pa. Units are available in air cooled and water cooled models for remote summer air conditioning applications and are designed for use with refrigerants 12 and 22. A line of hermetic motor compressors are also available in 3/4 to 2 hp range.



Wysong  
Squaring Shears  
are

Wysong No. 1225, capacity  $\frac{1}{4}$ "  
mild steel, cutting length 12 feet.

**RUGGED** to resist shock and pounding  
**RIGID** to maintain accurate alignment

The primary function of Wysong Shears is to give you maximum production with unsurpassed accuracy — day after day, month after month. Their massive hi-tensile castings assure greater resistance to deflection. Their extra large, accurately machined bearing surfaces prevent twists and binds.

Holddowns provide all the power needed for positive clamping of stock — yet, are easily adjusted to prevent marring soft metals or polished sheets.

Ball-bearing, precision back gauges are designed and built to withstand the impact of volume shearing. Easily adjusted to compensate for eventual wear.

Automatic lubrication is standard on larger models — one-shot lubrication on smaller models.

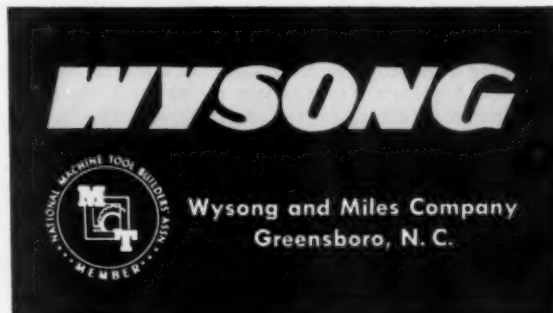
Safety features include totally enclosed clutch and gears, adjustable stationary finger guards, non-repeat unit and treadle lock.

*Buy A Wysong ... It's Miles Ahead*

Simplicity of operation and superior design are keys to low maintenance and low down time.

Power models are available with cutting lengths from 48 inches through 12 feet — capacities from 16 gauge through  $\frac{3}{8}$ " mild steel.

For greater accuracy, larger volume, easier operation and the finest in design — Buy a WYSONG ... It's MILES Ahead!



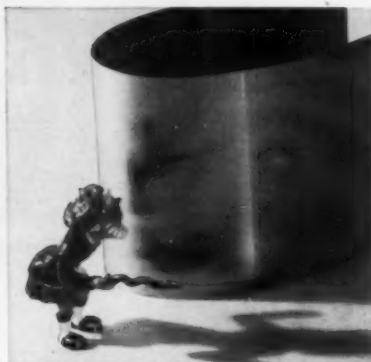
No matter which ***FINISH*** you like—you can buy it in  
***MicroRoll***<sup>®</sup> **QUALITY STAINLESS STEEL**



**2D-A**—A silvery white, but non-lustrous, surface produced by annealing and pickling cold reduced material. Steel sheets & strip in this condition are most ductile and the surface holds lubricant well for severe drawing operations.



**2B**—Steel in the 2D condition which is subsequently rolled on a "skin pass" or temper mill. The surface acquires a bright finish from the polished rolls. This surface is somewhat more dense and hard than 2D and is a better starting surface for later finishing and buffing operations.



**No. 3**—This surface is made by grinding with a No. 100 abrasive. This surface is smooth but not as reflective as 2B.



**No. 4**—A finer finish than No. 3 made by grinding with a No. 150 abrasive. Like No. 3, this surface is easily blended with hand grinders after forming, drawing or welding.



**No. 7**—Good reflectivity and brilliance made by polishing with a No. 400 abrasive. This semi-mirror finish must be protected during fabrication by adhesive paper or strippable plastics lest the finish be marred beyond repair.



**BRIGHT**—A highly reflective surface made by cold reducing with highly polished, glass-hard rolls. This finish is only available in Type 430 stainless.

These are our standard surface finishes that are available in types 201, 202, 301, 302, 304 and 430 except Bright which is type 430 exclusively.

These finishes are regularly supplied in sheet and coil form in widths up to 48 inches.

Since Nos. 3, 4, 7 and 430 Bright are smooth reflective surfaces, they are not recommended for severe drawing without special precautions as the mill finish may be marred. Applications such as dairy machinery, kitchen and restaurant equipment and architectural decorative work require only local forming, so these highly polished surfaces are not greatly disturbed. All mill polished sheets are carefully packed to avoid handling imperfections. Protective adhesive paper can be specified by the buyer when needed.

For specific information on recommended surface characteristics for a particular stainless steel sheet and strip application, address your request to our Product Development Dept.



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Producers of Stainless Sheet and Strip Exclusively

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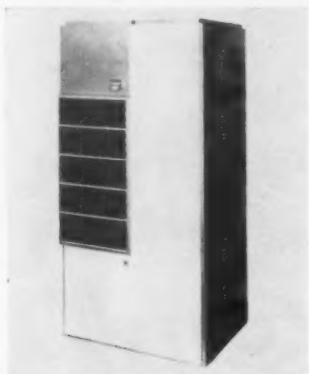


## equipment developments

(Continued)

### Year 'Round Unit

MODEL 577 self-contained year 'round air conditioning unit with internally mounted air cooled condenser and gas-fired furnace with 100,000 Btuh capacity—Bryant Mfg. Co., Dept. AA, 2020 Montcalm, Indi-



anapolis, Ind. Cooling capacity is 23,200 Btuh; condenser air is ducted to unit from outside. Unit can be installed in 28 X 35 in. space. Standard equipment includes direct-drive blowers, heating-cooling thermostat, welded steel heating element and high capacity condensing coil.

### Gas Vent Duct

LINE OF double-wall gas vent duct in 7, 8, 10 and 12 in. inside diameters—Dura-Vent Corp., Dept. AA, 2525 El Camino Real, Redwood City, Calif. Heavy gage galvanized iron outer wall is single-piece construction. Male and female joints are die formed; full inside diameter is maintained at joint. Section joints are connected with screws.

### Packaged Cooling Unit

MODEL AH packaged cooling unit as addition to air conditioning line.—Mayflower Air Conditioners, Inc.,



Dept. AA, Duluth Ave. and E. Seventh St., St. Paul 6, Minn. Self-contained unit is available in 2 and 3 ton sizes. It can be installed in attic utility room or basement.

A complete line

of America's finest

heating equipment



**fluid heat**  
AUTOMATIC HEATING EQUIPMENT

Oil and  
Gas Fired

Conversion Burners

Winter Air Conditioners

Hi-Boy and Lo-Boy

Horizontal Furnaces

Gravity Furnaces

Counter-Flow Furnaces

Boilers

Hot Water and Steam

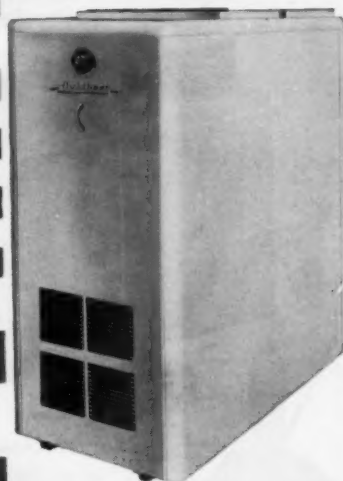
Oil-Fired Automatic  
Water Heaters

120 gal./hr. recovery

**PLUS**

Rotary Wall Flame  
Conversion Burners,  
Furnaces, Boilers

Hot Water and Steam



A broad line of quality equipment for oil and gas firing. Get full details today.



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*"Fabrikated"*  
REG. U. S. PAT. OFFICE

**DOUBLE CORE REGISTERS**  
with opposed blade dampers  
key control  
for Commercial Installations



**No. 27**

Adjustable Vertical Front Bars  
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up to 48" x 24"



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**THE INDEPENDENT  
REGISTER CO.**

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## equipment developments

(Continued)

### Gas-Fired Furnace

"RHEEMGLAS" GAS-FIRED furnace designed to complement household appliances—Rheem Mfg. Co., Dept.



AA, 7600 S. Kedzie Ave., Chicago 29. Available in 20,000 Btuh increments from 80,000 to 160,000 Btuh, units are in two tones of blue with contrasting trim of embossed gold and symmetrical squares on large front panel and trim. Combustion chamber is contoured to fit natural flame pattern from gas burner. Venting is accomplished with outlet at top of furnace near front panel through single stack.

### Packaged Chimneys

"AIR-JET" MODEL AA packaged chimney which measures 17 x 25 in.—General Products Co., Inc., Dept. AA, Fredericksburg, Va. Designed to complete a line of most commonly specified sizes, the packaged chimney is available in all the company's top housings: "Standard" (plain), "Contemporary" (with scored shadow lines) and "Brick Beauty" (with simulated masonry design), according to the manufacturer.

### Safety Switch

SAFETY SWITCH for the company's power gas burner, designed to insure delivery of both primary and secondary air before opening the automatic gas valve—Hastings Air Control, Inc., Dept. AA, 3215 Leavenworth St., Omaha 5, Nebr. Switch operates only if air is actually being delivered, eliminating the possibility of gas being admitted to burner if air shutter is accidentally closed. Featured in the safety switch are runner type pilot ignitor designed to eliminate burn-outs, and 100 percent safety shutoff on natural gas, the company states.



## GET EXPERT ASSISTANCE ON STAINLESS STEEL PRODUCTION PROBLEMS

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than 30 standard grades of ENDURO Stainless Steel at his disposal qualifies him as an expert—an impartial expert ready and able to assist you in combining top quality and true economy in your output.

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Dominion Culvert and Metal Corporation,  
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Seattle,

**CANADA**  
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SONOCO Fibre Duct has been widely used by architects, builders and contractors for years in residential loop and radial warm air, slab-floor perimeter heating systems. SONOCO Fibre Duct, especially in the larger diameters up to 36" I.D., is also ideally suited for commercial and industrial heating and ventilating installations. The low initial cost and handling ease, due to lightweight, long lengths, saves money and installation time.

SONOCO Fibre Duct is aluminum foil lined. 23 sizes—2" to 36" I.D., up to 50' long. Can be sawed to exact lengths on the job. FREE installation manual available upon request.

meets and exceeds all

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Blanchard,  
Newport News,  
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See our catalog in SWEETS



856

**SONOCO PRODUCTS COMPANY**

CONSTRUCTION PRODUCTS DIVISION

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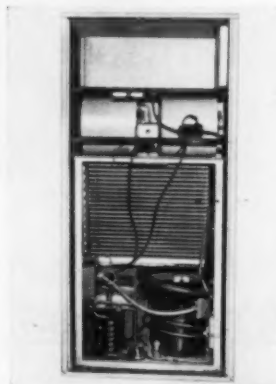
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## equipment developments

(Continued)

### Cooling Unit

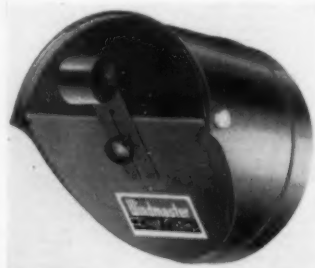
"FLEXIBLE-AIR" 5 hp free standing, hermetically sealed cooling unit with 65,000 Btuh cooling capacity—Heating and Air Conditioning Div., Stewart-Warner Corp., Dept. AA, 1826 Diversey Pkwy, Chicago 14. De-



signed for stores and offices, unit requires 36 × 22 in. floor space. Water cooled unit has water valve bellows connected to high pressure side for actuating water control valve if cooling tower is not used. Blower operation is continuous. Condenser has "tube-in-tube" design. Unit may be fitted with additional four-way adjustable louver deflectors to produce up to 360 deg air pattern.

### Draft Control

"WINDMASTER" round draft control with 45 deg vane and calibrated weight—Lima Register Co., Dept.



AA, 1790 N. Cable Rd., Lima, O. Unit can be installed directly into a "tee" fitting; adapter for straight



## equipment developments

(Continued)

furnace ducts fits around front half of duct and is secured at both top and bottom; draft control snaps into adapter. Unit features nylon bearings.

### Flaring Tools

FLARING TOOLS with cones finished in tool chromium, said to reduce



torque requirements for flaring up to 55 percent—Imperial Brass Mfg. Co.,

Dept. AA, 1200 W. Harrison St., Chicago 7. Hard chrome facing is also said to produce more highly finished face and tighter fit without possibility of tearing the flare face.

### Portable Cooling Unit

"FEATHERWEIGHT 75" portable, plug-in window cooling unit which weighs 90 lb—Whirlpool Corp., Dept. AA, St. Joseph, Mich. Unit has  $\frac{3}{4}$  hp. compressor motor, is rated at 6000 Btuh and operates on 115-v, 7.5 amp. It measures  $21 \times 14 \times 14$  in. Unit has single rotary control, adjustable grille, built-in thermostat and thermal overload protector. Cabinet is aluminum.

### Gas Regulator

MODEL RV-30 gas regulator for main burner and pilot loads, designed to fit into small areas—Maxitrol Co., Dept. AA, 12200 Beech Rd., Detroit 39. Synthetic rubber valve seat is designed to maintain accurate regula-

tion at low flow rates in spite of impurities in gas line; resilient valve seat conforms and keeps its proper

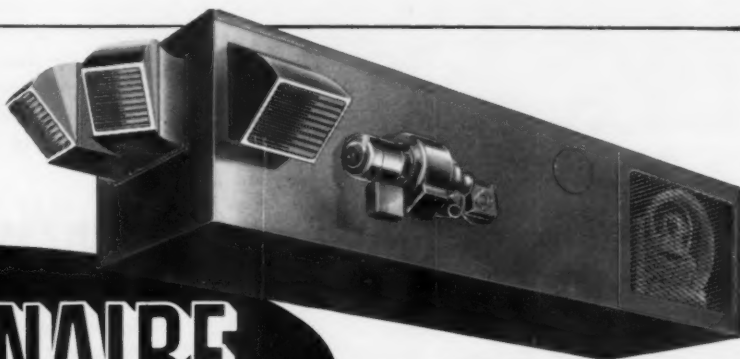


shape, the company states. Oval shape is said to compress width dimensions without lowering capacity.

### Impact Attachment

ROTARY IMPACT masonry drill attachment for heavy duty  $\frac{1}{4}$  in. electric drills—Ideal Industries, Inc., Dept. AA, 1084 Park Ave., Sycamore, Ill. Attachment inserts into

**DOMINANT  
name in overhead  
heating is still . . .**



# SHAFCONAIRE®

THE ORIGINAL SUSPENDED FURNACE

**Models available for Gas or Oil  
from 95,000 to 405,000 B.T.U. output**

**Write or call for complete information today!**



*Gas or oil-fired units designed especially for commercial and industrial installations*

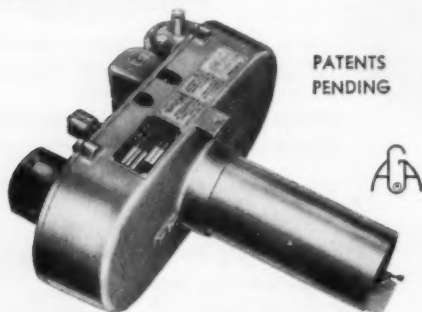
- ▶ **Backed by 18 years of specialized overhead heating experience!**
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- ▶ **Producing exclusively suspended type heating equipment!**

## OverHead Heaters, Inc.

1612 BOOK BUILDING • DETROIT 26, MICHIGAN • Woodward 2-4647  
Factory Location: Kalamazoo, Michigan



Yes, it's Nu-Way's entirely different approach to gas burner maintenance. This removable panel holds all operating parts and complete factory wiring. So the whole insides of this power inshot gas burner can be slipped out and carried to a bench in one piece. In addition, the primary air gate is adjustable . . . allows quick on-the-job adjustments for the way different furnaces fire. And look at that slim-trim design! Extra wide firing range of 80,000 to 200,000 BTU per hour. Write for Model G-200 Manual, to Nu-Way Corporation, Dept. AAG-97, Rock Island, Illinois.



**Nu-Way**  
gas burners

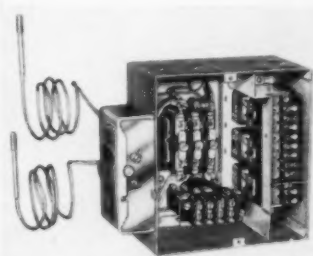
## equipment developments

(Continued)

drill chuck like a bit; masonry bit is inserted into attachment and secured with set screw. Inner cam action gives bit a hammerlike blow every half revolution. Unit weighs 20½ oz and adds 4¾ in. to the total length of the drill.

### Master Cooling Control Panels

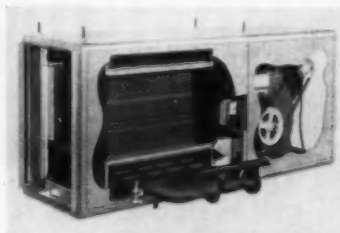
COOLING CONTROL PANELS in single or two-piece types—White-Rodgers Co., Dept. AA, 1209 Cass Ave., St. Louis 6, Mo. Single panel, for use on package cooling units and those with water-cooled condensing units,



incorporates both evaporating sequencing and condenser sections in one enclosure. Variations in pressure controls are available; panels can be obtained with or without integrally mounted high and low side pressure controls. Three relays can be housed in each single panel. Two-piece panel is designed primarily for systems with remote air cooled condensing units. Choice of relays and pressure controls is virtually same as in single panels.

### Gas-Fired Furnace

MODEL GS gas-fired horizontal furnace designed for crawl space, attic, or suspended installation—Thatcher



Furnace Co., Dept. AA, Centre St., Garwood, N. J. Units are in four models rated from 80,000 to 140,000 Btu/h input. Furnace features all-welded heavy gage steel heat exchanger of sectional design, cushion-mounted centrifugal blower, self-lubricated bearings, adjustable speed control and cast iron drilled port burner. Blowers range from 1/6 to 1/3 hp, according to the manufacturer.

15 years  
after it was  
built...



30 years  
after it was  
built...



## This STAINLESS "Covered Bridge" is ***EVER-NEW***

### "INFO" for Architects and Builders

- 1 "AL Structural Stainless Steels"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.
- 2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. AIA File No. 26D.
- 3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. AIA File No. 15-H-1.

Write for Details  
Address Dept. AA-93

The top photograph of the AL Stainless Steel-surfaced concourse that connects the Chicago Daily News building with the North Western station was taken about 1939-40. The lower picture was made early in 1955. There's no discernible change.

Another 30 years—50 years—100 . . . the bridge's stainless shell will still be just as good as new. No one knows *how long* AL Stainless actually will last, but it could be for centuries, if required. And all the time it requires no particular maintenance,

no painting or refinishing—just occasional washing to remove the grime that isn't carried away naturally by wind and rain.

No other architectural metal can match stainless steel in these properties. Not one can last as long, cost as little to maintain, and prove as economical in the long run.

● Use AL Stainless in *your* projects, for maximum service and lasting beauty, both in exteriors and interiors. Ask us for any help you need. *Allegheny Ludlum Steel Corp., Oliver Bldg., Pittsburgh 22, Pa.*

For Stainless Steel in ALL Forms—call  
**Allegheny Ludlum**

Warehouse stocks carried by all Ryerson Steel plants



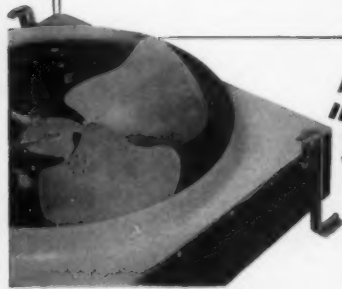
NOTE: TO AMERICAN ARTISAN READERS!

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offer luxury features  
at practical prices!

Homes equipped with Chelsea cooling and ventilating units have terrific extra sales appeal — yet the cost is so low that installation is practical for homes in any price range. Attic fans for complete home cooling, kitchen and bathroom ventilating fans and kitchen range hoods are luxury features that can easily turn prospects into buyers. By planning now — while your homes are under construction — installation is so easy that costs are negligible. Get the details from —

**Chelsea**

Home Cooling is a  
"Sales Must!"



All Chelsea Attic Fans have the exclusive  
"Floating Action"

CHELSEA FAN & BLOWER CO., INC.  
PLAINFIELD, NEW JERSEY

No. 59-28

## equipment developments (Continued)

### Indoor Thermometers

FOUR WALL thermometers and two for desk use—Minneapolis-Honeywell Regulator Co., Dept. AA, 2726 Fourth Ave. S., Minneapolis 8, Minn.



Designed for functional and decorative use, models include circular, square, diamond and rectangular shapes and coral, yellow, green and sandalwood colors. Desk models have black backgrounds.

### Oil Filter Cartridge

REPLACEMENT FILTER cartridge for most domestic oil burners—Fram Corp., Dept. AA, Providence 16, N. Y. Roving type cartridge consists of starch-free long-staple white cotton fibers spun into continuous strand and wound to controlled pattern of uniform density on metal screen center tube, according to the company. Tube provides rigidity. Cartridges are for gravity or forced feed systems.

### Metal Coating

"DERUSTO GALV-A-GRIP" protective coating that adheres to galvanized and other smooth metal surfaces—Master Bronze Powder Co., Inc., Dept. AA, 538-548 W. State St., Calumet City Ill. Coating is weather-proof and will not crack, chip or peel, according to the manufacturer. One gal. covers 500 to 700 sq ft surface on galvanized metal, aluminum, terne plate and tin, even if already rusted. It can be sprayed, brushed or rolled on to surface, and adheres quickly.



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FURNACES  
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CONDITIONERS**

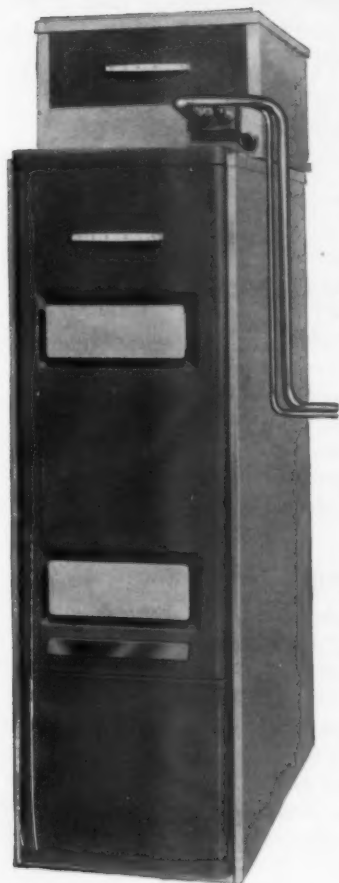


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To get a profitable share of today's expanding heating and cooling market, you have to sell recognized quality, top-dollar value, and trouble-free performance. You can do it... with Mor-Sun!

Mor-Sun offers you one of the greatest profit-building opportunities in the industry... new models, new designs, new features, new prices and new dealer profits... a complete line of warm air furnaces, air and water-cooled summer air conditioners.

First, see what you get from Mor-Sun—see what it costs—and then see how much more it puts in your pocket. Mor-Sun advanced design and engineering, plus the latest mass production methods, backed by hard-hitting merchandising, have teamed up to give you top-quality equipment, on-the-line competitive prices, faster turnover and bigger, much bigger profits.

## YEAR-ROUND SALES WITH MOR-SUN YEAR-ROUND AIR CONDITIONING

... a perfect example of the "MORE" you get with MOR-SUN

### HEATING-COOLING COMBINATIONS

- ... easy to install
- ... in a minimum of floor area
- ... finished in two-tone green, polished copper trim
- ... backed by a written guarantee of dependability
- ... priced for profits to you

### UPFLOW, REVERSEFLOW & LO-BOY FURNACES

- ... completely wired and assembled
- ... gas or oil, in a complete range of sizes
- ... new noise-free blower and washable air filter
- ... priced for profits to you

### AIR & WATER-COOLED AIR CONDITIONERS

- ... complete residential and light commercial line
- ... full rated cooling capacities
- ... precharged system on air-cooled models
- ... priced for profits to you

There's a Mor-Sun Furnace and Air Conditioner for every home heating and cooling requirement... the right size... the right price... for new construction and modernization.

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replace costly  
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Now you can plan your gas vent installations without relying on costly and often unsafe "rules of thumb"... with the new Metalbestos "Safety System" Gas Vent Tables.

There's no more gamble or guesswork in gas vent installation when the "Safety System" Tables quickly tell you everything you need to know before you even go on the job. Handy and accurate, they benefit you four ways:

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- ▶ you install more vents per man hour
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## *new* *literature . . .*

### **Heating, Cooling Lines**

THIRTY-TWO PAGE catalog covers heating, cooling and year 'round equipment. Both residential and small commercial units are illustrated and described—*American-Standard, Air Conditioning Div., Dept. AA, 40 W. 40th St., New York 18.*

### **Air Cleaners**

BOOKLET B-1460 describes the features of new models of "Precipitron" air cleaning equipment. According to the company, the unit saves space, erection costs, servicing and operating costs. Included are tables giving capacities and dimensions—*Westinghouse Sturtevant Div., Dept. T-287-AA, 200 Readville St., Hyde Park, Boston 36, Mass.*

### **Type 430 Stainless Steel**

INFORMATION ON TYPE 430 nickel-free straight chromium stainless steel is presented in a 28 page illustrated brochure. A section on fabrication includes data on shearing, bending and roll forming, blanking and punching, perforating, drawing, soldering, brazing, annealing and polishing. Discussed are physical properties, corrosion resistance, maintenance and typical applications—*Washington Steel Corp., Dept. AA, Washington, Pa.*

### **Angle Iron Shear**

MODEL 607 ANGLE IRON SHEAR is described in a two page illustrated data sheet. According to the company the shear, only 26 in. high, has an 18 ton capacity. It is said to shear angle iron up to  $4 \times 4 \times \frac{1}{4}$  in. and bend mild steel  $6 \times \frac{3}{8}$  in.—*W. A. Whitney Mfg. Co., Dept. AA, 636 Race St., Rockford, Ill.*

### **Metallic Putty**

FOUR PAGE ILLUSTRATED BULLETIN describes "Metalset" aluminum filled

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to remember*



**TAMCO**

*Quality leader  
in temperature  
appliances*

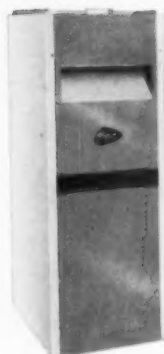
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*Clipper* **LINE OF FORCED  
AIR GAS FURNACES**

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*See other side*



## Clipper

### UPFLOW

Standard and Heavy-Duty Models, 80,000 to 200,000 B.t.u. input. 15"-diameter (oversized) blower delivers abundant air at slow speed — whisper quiet! Smaller heating element sections offer less restriction to air flow. Heavy-gauge steel casing unaffected by high static pressure. America's finest air conditioning furnace!



## Clipper

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Like the Clipper Upflow, converts ideally to air conditioning applications. 15"-diameter statically and dynamically balanced blowers. 16-gauge electrically welded steel heat exchanger. 82,500 to 140,000 B.t.u. input.



### HORIZONTAL

Rugged, versatile space saver. Approved for installation in attic, basement, under-floor. Five sizes, 70,000 to 140,000 B.t.u. input — readily converted to air conditioning.



## Tamco Wallbeater

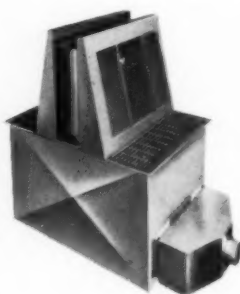
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Single, Dual Wall, Single Wall Dual Models — 28,000 to 57,000 B.t.u. input. Install fast — standard dimensions all models. Fully vented. Neat, unobtrusive — projects only 3 7/8" from wall. Exclusive "POWER-FLO" BLOWER ACCESSORY greatly increases air circulation — fits all units — new or existing installations.

## Barnes

### FLOOR FURNACES

Flat Floor, Dual Wall and Single Wall Models — recessed and flush mount — 25,000 to 57,000 B.t.u. input. Install quickly, heat quickly — quiet, economical performance.



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 Clipper Upflow-Counterflow Spec.  
 Sheet No. FA-1 ☐  
 Clipper Horizontal Spec. Sheet No. FA-3 ☐  
 Tamco Wall Heater Spec.  
 Sheet No. WH-1 ☐  
 Barnes Floor Furnace Spec.  
 Sheet No. FF-1 ☐  
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 No. SB-TAC ☐

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- ★ LESLIE guaranteed quality and performance
- ★ Prompt service from your LESLIE Jobber

Now, you can get LESLIE Roof Ventilators... backed by the leading name in residential ventilation since 1939. This new line of Roof Ventilators incorporates the quality and many exclusive design features you expect from LESLIE products. Our enlarged production facilities assure prompt service on all your requirements.



## ROTARY TURBINE TYPE

**Standard Model**—Low cost, wind powered suction rotary turbine ventilator, made of 26 gauge galvanized steel with weatherproof Oilite bronze radial bearings and oil sealed ball-bearing thrust. Furnished in prime coated galvanized steel in 6", 8", 10" and 12" sizes.

**Industrial Model**—Heavy duty type designed to exhaust greater air volume. Provides effective heat, moisture and fume removal. Entire weight of rotor is supported by rotor suspension unit to provide true balance and proper alignment with rotor band. Rotor turns on heavy duty ground ball bearings. Furnished in prime coated galvanized steel in 6 sizes from 14" to 30".



## STATIONARY TYPE

Draws air by utilizing pressure differentials between inside and outside atmospheres. Versatile, economical... ideal for warehouses, factory, farm, schools, etc., where gravity ventilation is required. Stormproof design provides effective, low-cost ventilation under all weather conditions. Galvanized steel in 14 sizes from 6" to 65".



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#### COMBINES ALL THESE FEATURES:

- EASIER INSTALLATION — 4" wide flange... "no legs" or "posts" to get in the way.
- WEATHERPROOF — wide flange around top of stack, plus parallel baffle in rear.
- MORE FREE AREA — as certified by Metal Ventilator Institute.

- BETTER APPEARANCE — streamlined, one-piece top, and roof-hugging design.
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Available in galvanized steel or aluminum, the "50 Series" Roof Vent is YOUR best answer to the demand for a vent that installs without trouble, that looks and performs well, and provides top quality at the right price.

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**Flu-Bonnet**

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## Manufacturers' Agents

*Are you interested in securing additional lines?*

We are occasionally asked by our manufacturer advertisers to suggest the names of manufacturers' agents in various sections of the country whom they can contact in regard to representation of their residential and small building heating, air conditioning and sheet metal products.

If you would like your name listed on our records for inquiries we may receive on your territory, we invite you to write us. There is no charge in connection with this service.

**American Artisan, 6 N. Michigan Ave., Chicago 2**

## new literature

(Continued)

putty said to adhere well to iron, steel, aluminum, wood and glass. It may be used to smooth or fill metal surfaces, or to fill seams, cracks and holes—*Smooth-On Mfg. Co., Dept. AA, 572 Communipaw Ave., Jersey City 4, N. J.*

## Dust Collector

BULLETIN No. 274B (16 pages) discusses the operation of "Roto-Clone" dust collectors featuring a water spray that maintains a flowing film of water on collecting surfaces. According to the company, this feature lowers water requirements to a minimum and makes it possible to trap even very light and fine dust particles. Included in the bulletin are wiring diagrams, 23 performance tables, exploded view of the shaft assembly, engineering data, erection diagrams, drawings showing venting of secondary air, and tables showing shipping and operating weights, normal water supply rates and dimensions for sludge settling tanks. Collectors are available in 12 sizes ranging from 1000 to 50,000 cfm—*American Air Filter Co., Inc., Dept. AA, 215 Central Ave., Louisville, Ky.*

## Cleaning Stainless Steel

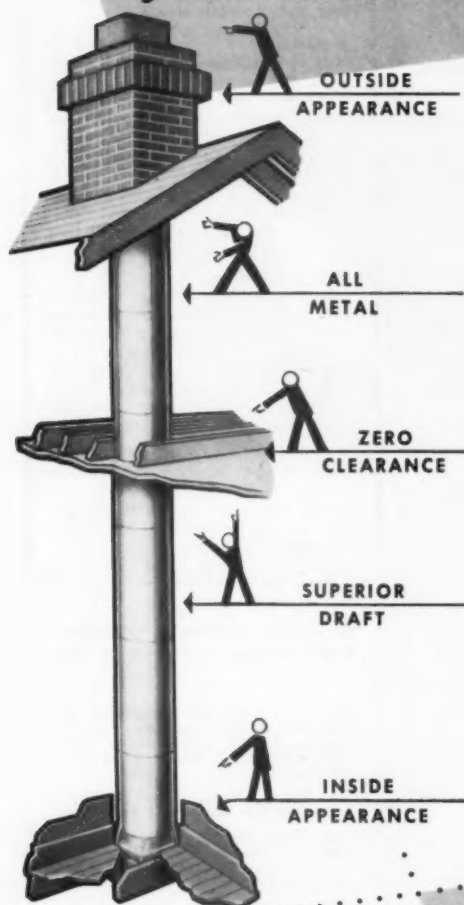
"HOW TO CLEAN STAINLESS STEELS" is the subject of a 25 × 36 in. two color wall chart. Among the subjects covered are Cleaning for Welding and Soldering, Cleaning After Fabrication, Cleaning in Service, and Precautions. Ask for P. O. 857—*Armco Steel Corp., Dept. AA, Middletown, O.*

## Propeller Fans

BULLETIN E-57 (24-pages) describes and illustrates facilities for testing propeller fans and fan components. Also included are specifications, installation and maintenance tips, and brief descriptions of construction features. Tables show how to estimate air handling requirements, entrance and elbow losses and duct sizes—*Aerovent Fan Co., Inc., Dept. AA, Piqua 2, Ohio.*

# Majestic thulman chimney

— the best in Safety, Performance, Appearance from base to top housing



Perfectly proportioned top housings blend with any house design, large or small, conventional or modern. The simulated red-brick housing adds distinctive eye appeal, and the plain tops may be painted on the job to fit any color scheme. Three rectangular housings, for single or double chimneys, add massiveness at only slight extra cost.

The 7" Thulman Chimney flue is made of high nickel-chromium stainless steel, rust-proof and acid-resistant. All other parts from bottom to top are made of lifetime metals—no breakage, no loss.

Completely safe, with built-in clearance, the Thulman Chimney can be installed directly against the walls, flooring, beams or joists, throughout its entire height. Severe tests by U/L proved surface temperatures were lower than those of a lined brick chimney.

Straight and smooth, the stainless steel flue is practically frictionless, promoting adequate draft and high capacity. Heating equipment can be installed directly under the flue, aiding the draft and, at the same time, saving space.

Supports for the Thulman Chimney are completely concealed. Only the neat, square ceiling plate, extending 1-1/2" beneath the ceiling, is visible from below.

## Majestic Thulman GAS VENT Safety-Approved

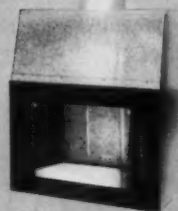
The new Thulman Gas Vent is listed by Underwriters' Laboratories, Inc., as "Type B-Zero", their highest gas vent safety classification. It may be used with any approved gas appliance producing flue gas temperatures as high as 550° at the draft hood outlet.

### Easy to Install

Needing no clearance from combustible construction, and no ventilation where enclosed in combustible partitions, the Thulman Gas Vent is especially easy to install. Most attractive top housing of any "Type B" vent, too!

## Majestic Thulman Fireplace

A durable cast-iron and steel fireplace that cuts material and labor costs to rock bottom! Even the sliding screen is built in at the factory! New marble and black glass surrounds are available, to fasten to face with mastic. Now in two sizes, 30" and 36" opening widths. Needs no masonry, no special clearances.

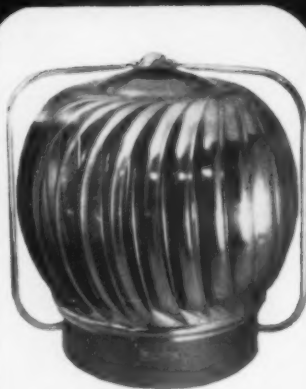


Write Today for details on these cost-saving products

The **Majestic** Co., Inc.  
394 Erie St., Huntington, Indiana

# GREENHECK

## Air Movement Devices



### CENTRIFLO TURBINE VENTILATOR

The new GREENHECK "Centriflo" Turbine Ventilator is the outstanding value in turbine type wind driven ventilators, achieved by complete redesigning . . . careful engineering of each component part provides the ultimate in efficiency, performance and quality . . . available in all aluminum or all galvanized, it has these distinctive features: ground deep groove ball bearing in aluminum in self-aligning shielded bearing housing—shielded from dust and moisture . . . aluminum rotor . . . suspension assembly—rubber noise and vibration eliminators—this unique suspension of the rotating unit and bearing in rubber is the first in the turbine vent field. Made in sizes 14" to and including 30".

*Write*

for complete  
details and new  
catalog 12-K.

**GREENHECK**  
FAN & VENTILATOR CORP.  
SCHOFIELD • WISCONSIN

## new literature

(Continued)

### AC Valves, Fittings

CONDENSED CATALOG (12 pages) contains illustrations, sizes and prices of valves, fittings and service kits for air conditioning applications—Kero-test Mfg. Co., Dept. AA, 2503 Liberty Ave., Pittsburgh 22.

### Central Cooling Systems

CONSUMER FOLDER covers cooling equipment which may be added to forced warm air plants or installed independently. The units are air cooled, are available in 2, 3 and 5 ton capacities—McQuay, Inc., Dept. AA, 1600 Broadway, N.E., Minneapolis 13.

### Cooling Towers

BULLETIN features "TM" blow-through and "TU" draw-through cooling towers. The construction, components and finish of 19 sizes of factory-assembled centrifugal fan cooling towers are described. Selection charts are included—Baltimore Aircoil Co., Inc., Dept. AA, P. O. Box 7322, Baltimore 27, Md.

### Pumps for Cooling Towers

DATA SHEET No. 345 features a chart designed to aid in the selection of pumps for cooling towers. Included is information on capacities, heads and drives—Barnes Mfg. Co., Dept. AA, Mansfield, O.

### Porcelain Enamel Panels

DESIGN MANUAL, part 2, describes the advantages of porcelain enamel in curtain wall construction. The sections on design provide data of particular value to contractors, engineers and architects in planning curtain wall sheathed buildings. Specific information is provided on the following subjects: types of panels, metal fabrication, core materials, panel assembly, joint design and attachment methods—Architectural Div., Porcelain Enamel Institute Inc., Dept. AA, 1145 Nineteenth St., N. W., Washington 6, D. C.

# YOU are invited to read and use AMERICAN ARTISAN

You who are making your livelihood from warm air heating, residential air conditioning or sheet metal contracting can best use the practical helps published in American Artisan each month.

• Last year's record is evidence that the *Artisan* covers these subjects most thoroughly: 200 feature pages on Air Conditioning and Warm Air Heating; 125 pages on Sheet Metal Fabrication and Contracting; 165 pages on Management Methods. That's 490 pages—in addition to useful departments such as Questions & Answers, New Products, Trade Literature, Association Activities, etc.

• You will get in the *Artisan* vital information and practical "know-how" of dollars-and-cents value to your business. It points the way toward better methods, lower costs, and improvements in merchandising and contracting procedures, also correct practices in design, fabrication, installation, and servicing.

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Street . . . . .

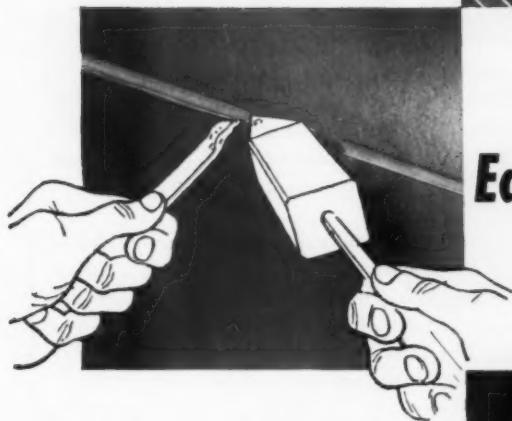
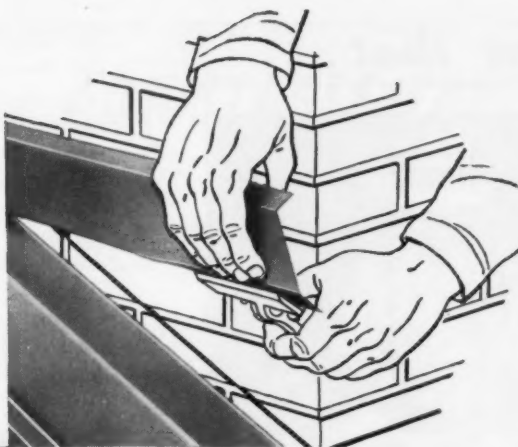
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**Easy to Work...**



**Easy to Solder...**



**FOLLANSBEE TERNE**

*... still your best bet for profit*

The ductility of Follansbee Terne makes it *so easy* to bend and shape and, because it is already primed, Follansbee Terne will give you a perfect soldered joint every time.

In terms of dollars and sense, this *workability* of Follansbee Terne will cut installation time and cost for you.

Follansbee Terne will not peel or crack, will not stain, and will last a lifetime. You never have to worry about expansion and contraction when you use Terne.

And remember, Follansbee Terne will give you the best job at the best profit every time.

Follansbee Terne is Carried in Stock by Leading Sheet Metal Distributors Everywhere.



**FOLLANSBEE**  
**STEEL CORPORATION**

FOLLANSBEE, WEST VIRGINIA

Terne Roofing • Cold Rolled Strip • Polished Blue Sheets and Coils  
Sales Offices in Principal Cities

*we hear that...*



PROPER TECHNIQUE for making strong soldered joints in stainless steel is demonstrated at stainless steel clinic. It takes a large soldering copper, held over the lap and moved slowly to heat the joint thoroughly

► REPUBLIC STEEL CORP.'s Berger Div. is promoting the use of stainless steel roof drainage products in key cities throughout the U.S. with a traveling "Stainless Steel Clinic." Sheet metal contractors and architects comprise both the audience and the student body at the clinic sessions, which are held in the evening.

The clinics first present the advantages of the metal and then demonstrate easy methods of working with it. Using the "shirt-sleeves" approach, the clinics encourage members of the audience to try out for themselves the methods of handling stainless recommended by the steel company. According to Russell L. Seiple of the Berger Div., during the past year sales of stainless gutters and downspouts have increased 100 percent.

► THE AIR CONDITIONING DIV. of American-Standard has issued new dealer price lists showing reductions on many of the furnaces in its warm air heating line. The division has also extended its warranty term on all furnaces from one to 10 years.

► JAY P. JOHNSON, former sales manager for the roof ventilator division of the Swartwout Co., has formed the Dexter Engineering Co. The Dexter firm, with offices at 1961 Wyandotte Dr., Cleveland, will act as an independent manufacturers' agent handling Swartwout and other accounts.

► TAMCO CORP. recently shipped its first carload of "Clipper" forced air gas furnaces from its plant at Sebastopol, Calif. The "Clipper" line has been expanded to include both vertical and horizontal forced air units. The Tamco firm also manufactures "Barnes" furnaces in both floor and wall models.

*When you sell HEIL...*

*you sell for profit!*

Your customers and prospects are earning more, buying *better*. You can sell heating and cooling at a good profit by offering a custom-quality, *better* line that sells at a realistic price, yet provides you with a higher margin of profit — HEIL! Write *now* for important information on how you can sell *more* than price with HEIL!

**sell HEIL the FOUR-most heating & cooling line!**

**1. Product 2. Name 3. Styling 4. Marketing**

The Heil Co. is a member of  
**GAMA** and an associate member of



4 Oil Conversion Burners



13 Oil-Fired Winter Air Conditioners



6 Oil-Fired Boiler-Burner Units



12 Summer Air Conditioners



14 Gas-Fired Winter Air Conditioners



6 Gas-Fired Boiler-Burner Units



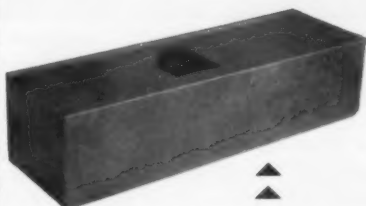
3 Gas Conversion Burners

**THE HEIL CO.** 3081 W. Montana St., Milwaukee, Wis. • Hillside, N. J.

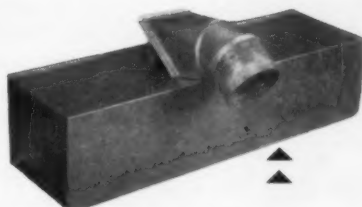
Union, N.J.; Atlanta, Ga.; Cleveland, Ohio;  
**SALES OFFICES:** Chicago, Ill.; Milwaukee, Wis.; Kansas City, Mo.; Denver, Colo.;  
Dallas, Texas; Los Angeles, Calif.; Seattle, Wash.

# *NOW* an ADJUSTABLE TAKEOFF

## AT NON-ADJUSTABLE TAKEOFF PRICES

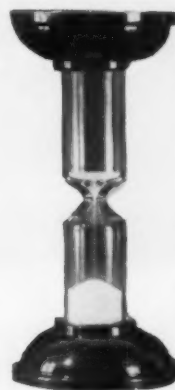


1. Cut rectangular opening in desired location.



2. Dip leading edge of takeoff into opening.

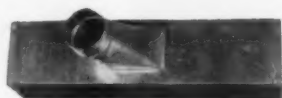
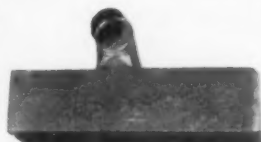
**3** *Simple Time Saving Steps Reduce Installation Labor*



3. Position three edges in opening. Flatten notching with fingers to secure.

### *Versatile . . .*

Complete versatility in all applications. Adjusts from straight to 90°.



### *And . . . They Are Cartoned!*



# ARMSTRONG FITTINGS COMPANY

DES MOINES, IOWA

Armstrong Fittings Company  
P. O. Box 1356, Des Moines, Iowa

Please rush me a 1957 catalog of the complete line of fittings.

Company .....

Address .....

City ..... State .....

Signed .....



# Quickdraft...

## THE WORLD'S MOST EFFICIENT POWER EXHAUSTER

...for industry... for institutions... for residences

- ★ NO MOTORS, FANS OR BEARINGS IN EXHAUST LINE
- ★ NEEDS NO STACKS ★ ACID RESISTING VITREOUS ENAMEL FINISH

FOR INDUSTRY, Quickdraft excels in venting paint booths... abrasives... corrosive gases... noxious fumes... high temperatures and moisture. Its blower operates in clean or outside air. It eliminates down-time for cleaning and replacing fan blades. It improves industrial venting and reduces maintenance costs!

FOR INSTITUTIONAL AND COMMERCIAL BUILDINGS, Quickdraft efficiently vents heating plants, water heaters and incinerators at roof level. It saves the cost of building unsightly tall stacks.

FOR RESIDENCES, Quickdraft makes low, cold and erratic chimneys function. On and off with the fire, Quickdraft maintains constant draft required for efficient and economical combustion of all fuels. It eliminates pulsating or chattering, puffing, smoking and sooting.

SEND FOR QUICKDRAFT ENGINEERING DATA ON YOUR VENTING OR HEATING APPLICATIONS... TODAY.

### IMPORTANT NOTICE

In addition to standard acid resisting vitreous enamel finish, all Quickdraft units are available in No. 316 Stainless Steel or in rigid Polyvinyl Chloride for withstanding highly corrosive gases. With static pressures up to 12-inches, Quickdraft is ideal for materials handling applications.



THE  
**Quickdraft**  
CORPORATION

P.O. Box 87-D, Duober-Hampden Bldg., Canton 1, Ohio

we hear that

(Continued)



MEMBERS of the "Victor Wing Club" combined vacation pleasures with business discussions during recent meeting at Whitehall, Mich.

► HALL-NEAL FURNACE CO. recently held its annual "Victor Wing Club" business-vacation meeting at Whitehall, Mich. According to Fred Boone, president of the firm, club members are selected each year from the company's dealer organization on the basis of outstanding sales records, based on potential. The club is the firm's dealer advisory committee. Winners of sporting events conducted during the course of the three day meeting were Joe Flacek, golf; Tony Snitgen, horseshoes; and Wayne Lienhart, shuffleboard. Kenney Strong of Crawfordsville, Ind., won the award for the largest fish caught during the three days and Max Bowen was checkers champion.

► HIGHLIGHT of the recent annual sales meeting held by Skuttle Mfg. Co. was the introduction of a number of new products including "Skuttle-Air" permanent plastic filter for heating and air conditioning systems and several newly designed humidifier components. Twenty district representatives from all parts of the country were in attendance at the meeting.

► PULLMAN VACUUM CLEANER CORP. now supplies 10 service reminder tags with each "Never-Clog" furnace cleaner. This step was taken following surveys conducted for the firm by a sales engineering company which revealed that one of the best sources of sales revenue comes from such service reminder tags placed on furnaces at the time of installation or service. The tags give the name, address and telephone number of the dealer to call for emergency or regular service.

► PACIFIC INDUSTRIES, INC., has combined two of its operating divisions into one organization, according to Donald D. Smith, president of the firm. The new division will be known as the Custom-Aire Products Div. and will manufacture the wall furnaces formerly made by the San Carlos Mfg. Div. and the forced air gas furnaces for basements and attics formerly produced by the Heating Equipment Mfg. Div.





# Just like that!

## ROUND OAK

### Customers Help You Sell!



## ROUND OAK HEATING

### — with air conditioning so easy to add!

Round Oak has had a guiding principle these 86 years that quality . . . real quality . . . is not a hocus-pocus matter recognized only by experts. Nobody knows better than your customer, for instance, how his heating equipment is satisfying his demands. Our endeavor has been . . . and will continue . . . to make every Round Oak customer a Round Oak Salesman.



Isn't this type of equipment what you'll be proud to offer your customers? Round Oak "home comfort" equipment is backed by an "old-reliable" manufacturer . . . with a "young," aggressive sales and promotion program to fortify your efforts.

#### ROUND OAK CO., INC. • Dowagiac, Michigan

Gentlemen: Please rush me full details on the Round Oak heating and air conditioning line.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



**ROUND OAK CO., INC.**  
DOWAGIAC, MICHIGAN



GRADUATES of American Air Filter Co.'s technical training school have been assigned to the firm's manufacturing, sales, foreign and advertising departments

► **AMERICAN AIR FILTER CO., INC.**, recently graduated its first class from a five month technical training school. James W. May, director of technical training, said the group's curriculum included the theory of air and its properties, characteristics, movements, etc., elements of electricity, properties of dust, heat transfer, etc.

Two of the firm's officials have recently been elected to membership of working committees of the Producers' Council, Inc., a national organization of manufacturers of building equipment. John Frazier, sales promotion manager, has been named to the marketing

research committee. Jack O'Neil, assistant advertising manager, has been selected for the merchandising committee.

► **A TOTAL OF 18 ONE-WEEK COURSES** will be conducted by American Blower Div. of American-Standard under its 1957-58 schedule for air conditioning training schools. First school will open on September 30. Fourteen of the courses will deal with service and four with application of commercial air conditioning equipment.

► **THE NEW STEEL SERVICE PLANT** of Joseph T. Ryerson & Son, Inc., warehousing subsidiary of Inland Steel Co., in Indianapolis, Ind., which has been under construction since early in 1957, is now open for business, according to Robert L. Larson, general manager. The plant will serve Indianapolis and southern Indiana.

► **THE CARLIN CO.** has launched a new quarterly publication, "Facts 'n Figures," designed to keep wholesalers and their dealer-contractors up to date on sales ideas, news of the field and installation and service helps. President B. C. Lindberg stated, "Our main objective is to make 'Facts 'n Figures' just what the name implies—a source of engineering and technical information that will assure proper installation and servicing of U. S.-Carlin burners."



## Conductor L. Bow says:

Mechanically formed **Cincinnati Elbows** cut installation time. Fully automatic machinery shapes and tapers them to fit all standard size pipe. Hot-dipped in zinc . . . **after** formation . . . to retard rust.

Your choice of size, angle, gauge . . . in copper, aluminum, stainless or galvanized steel. Ask your jobber.

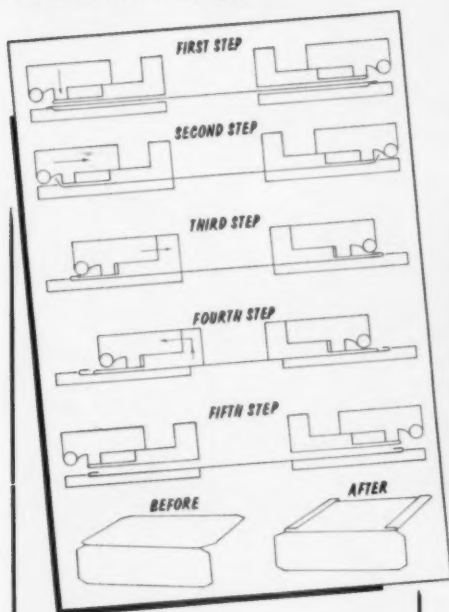


**CINCINNATI ELBOW CO.**

4730 Madison Road • Cincinnati 27, Ohio

# ***NOW*** FORM 2 CLEATS IN 1 OPERATION with this new FALLSINGTON "Cleat-Maker"

... HERE IS  
WHAT IT DOES!



## ***Step No. 1***

Sheet is inserted, machine is actuated, dies move downward.

## ***Step No. 2***

Dies move inward to accomplish pre-bending of cleats.

## ***Step No. 3***

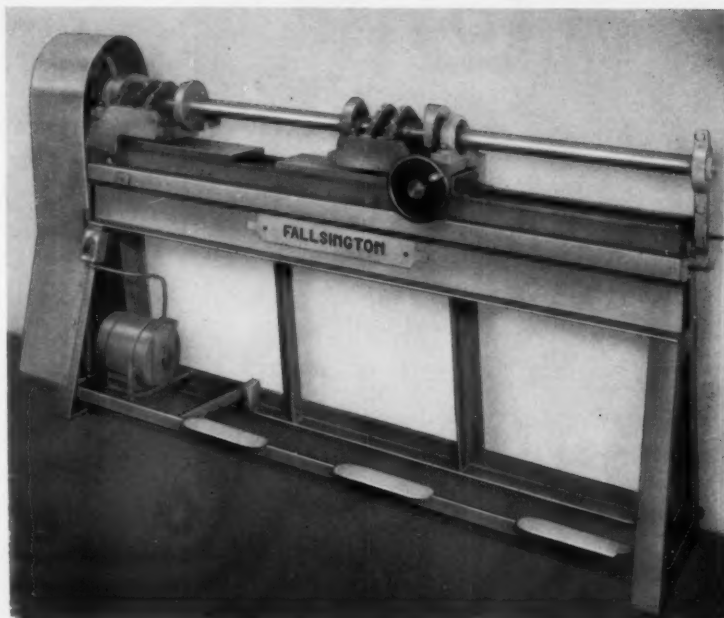
Cleats are bent completely.

## ***Step No. 4***

Dies move upward to clear sheet.

## ***Step No. 5***

Dies revert to starting position, sheet is removed.



- INCREASE PRODUCTION
- MORE ACCURATE WORK
- ELIMINATES "SHOP" FATIGUE

Here's a new, sure way to save a lot of time and money in shops prefabricating sheet metal duct work in large quantities.

It's the new "Cleat-Maker" by FALLSINGTON, which will enable mechanics to produce more accurate duct sizes because both end cleats are formed simultaneously. The "Cleat-Maker" will help duct manufacturers and the larger sheet metal fabricating shops to increase production from the normal 600 cleats per day by hand operation, to 3600 per day automatically with a single operator. It is entirely possible for the machine to pay for itself in six months' time, if operated at capacity.

The "Cleat-Maker" takes up a space only three feet by six feet and special sizes can also be furnished. More information will be sent upon request.

**FALLSINGTON**  
**MANUFACTURING COMPANY**  
**FALLSINGTON** **PENNSYLVANIA**





## Bethcon is strong yet easy to work

It's true: Bethcon galvanized sheets offer a remarkable combination of strength and ductility not to be found in other galvanized sheets. And that, of course, results in smooth shop-work and satisfied customers.

Bethcon sheets owe their superior qualities to Bethlehem's last-word continuous galvanizing lines. These lines include a continuous annealing process which gives the base steel its strong-yet-workable characteristics.

In addition, Bethlehem's continuous galvanizing process applies the zinc coating much more tightly to the steel than the conventional hot-dip method. Thus you can put a Bethcon sheet through the toughest forming processes without danger of cracking or flaking the coating. Even when Bethcon is doubled back on itself, the coating remains intact.

Bethcon sheet is available in 13-ga and lighter, coiled or in cut lengths,

with either plain open-hearth or copper-bearing steel (Beth-Cu-Loy) for the base metal. If you desire additional information on Bethcon, you will get prompt attention from the nearest Bethlehem sales office.

**BETHLEHEM STEEL COMPANY**  
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold  
by Bethlehem Pacific Coast Steel Corporation  
Export Distributor: Bethlehem Steel Export Corporation

# BETHLEHEM STEEL







Thomas I. Byrd



Harold W. Faulkender

► THOMAS I. BYRD, former executive vice president of the Lau Blower Co., was elected president and Harold W. Faulkender, former president, was named chairman of the board at a recent meeting of the firm's board of directors.

► THE NEW DAY & NIGHT MFG. Co. plant at Puente, Calif. is scheduled for occupancy in early fall. Over 500,000 sq ft will be utilized in the firm's manufacturing of heating and air conditioning and water heating equipment.

► FIRST TRUCKLOAD SHIPMENT of Jackson & Church warm air furnaces built in the East York, Pa., plant of York-Shipley, Inc., was made 11 working days after the manufacture was taken over. According to York-Shipley, eventually all furnace manufacturing formerly done at Tawas City, Mich., will be handled in York.

► LEONARD C. SMYTH, executive vice president of the Roberts-Gordon Appliance Corp., has retired after almost 20 years of service. Mr. Smyth will continue as a director of the firm and will also serve as a consultant.

► HENRY M. HAASE was recently elected president by the supervisory board of directors of the York Div., Borg-Warner Corp. Other officers elected are Stewart E. Lauer, chairman of the supervisory board; Marion F. Dick, secretary; J. J. Floreth, vice president and director of installation services; and Austin Rising, vice president and director of marketing. Following the election of officers, the board members were taken on a tour of the development and research laboratories where they viewed a number of new products including residential and commercial heat pumps as well as residential heating and cooling systems to be introduced in 1958.

► ROLLED STEEL CORP. recently received an "Industrial Good Neighbor" citation in recognition of its record of clean and quiet operation. The award was presented by the Chicago Association of Commerce and Industry in connection with Chicago's annual clean-up campaign.



it takes  
**PRECISION-MADE  
FITTINGS**  
to meet  
**MODERN DEMAND**

# OHIO VALLEY

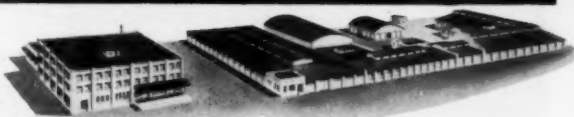
## *Furnace Fittings*

Your customers expect top quality installations. Meet their requirements with precision-made Ohio Valley furnace fittings. Sell *comfort* and *convenience* instead of "shop time".

DO IT BETTER, FASTER —  
WITH OHIO VALLEY

*Carried in Stock by Leading Wholesalers*

Catalog available... get it from us  
or from your wholesaler



Ohio Valley Hardware Co., Inc.

Manufacturing Division  
Evansville 2, Indiana



# Viking<sup>®</sup> Blowers



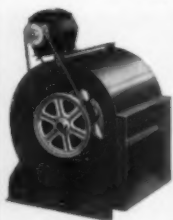
**"Viking's new pressure sensitive 'design kit' cuts my blower fitting problems in half"**

## New Viking Blower Design Kit

... makes it easy to plan how Viking's Interchangeable "B" Blower will fit into units you're designing without using a pencil! Adhesive-backed transparent scale drawings permit you to combine feet, different size motors and blower housing in the right combination and proper position for your reproduction machine in minutes.



## New Viking "B" Interchangeable Blower



- First cushion-bearing with built-in journal for longer life.
- First factory-packed bearing which is oilable.
- First all-welded non-flexing high-speed wheels.
- First truly interchangeable blowers to reduce your test time and costs.

Write on your letterhead for your "Blower Design Kit"

**VIKING AIR PRODUCTS**

5601 Walworth Ave., Cleveland 2, Ohio

## we hear that

(Continued)



R. L. Becker

▶ R. L. BECKER has been elected vice president in charge of sales by the board of directors of A. Nabakowski Co., Amherst, O., sheet metal contractor. During the past several years Mr. Becker has served in various capacities including purchasing agent, estimator, salesman and executive assistant to the president in charge of sales.

▶ A WIND TUNNEL designed for study of vent top operation and air flow over residential and commercial rooftops has been constructed by research engineers of the Metalbestos Div. of William Wallace Co. The tunnel, which will be placed in operation some time this year, is expected to produce a wind velocity of over 60 mph.

▶ RHEEM MFG. Co.'s Sparrows Point, Md., plant recently produced its 1,000,000th gas fired water heater. Top, front panel and bottom of the milestone unit's jacket were finished to simulate gold plating. To mark the occasion, the company held open house for some 2000 wives and children of company employees at Sparrows Point and for business and civic leaders in the Baltimore area.

▶ F. D. RAMSEY & Co., INC., La Porte, Ind. sheet metal contractor, has moved into new and larger facilities on the northeast corner of Washington and Jackson Sts. The move into the new quarters — only a block away from the previous location — was completed during a recent weekend. While the move was being made, the firm's more than 20 employees and their families were guests of the management at a company picnic held at the summer home of William S. Bard, secretary-treasurer of the company. For many years, the Ramsey firm, founded in 1923 by Fred D. Ramsey, has been expanding its heating, air conditioning and sheet metal services for residences and commercial buildings, the firm's officials pointed out, and in more recent years has added industrial sheet metal engineering and welding departments.

▶ THE FARR Co. has recently completed a 28,000 sq ft addition to its El Segundo, Calif. plant. The new addition provides for increased manufacturing and engineering facilities required to meet accelerated production schedules.

▶ WHEELING CORRUGATING Co. has opened a new warehouse at 1722 Walden Ave., Buffalo 25, N. Y.

## wholesaler doings...



OHIO BOYS enjoy sports at Camp Inawandewin, near Akron, through courtesy of Alliance, O., wholesaler

▶ ALMOST 300 BOYS have enjoyed expense-free summer vacations during the three years the "Christmas in August" program sponsored by the Robertson Heating Supply Co. and its dealer organization has been in effect. Under the plan, the money which the Robertson firm would otherwise have spent on Christmas gifts for its dealers, is used to pay the expenses of camp vacations for boys who live in towns and cities served from the company's six warehouses. The boys are chosen in recognition of leadership qualities demonstrated in school. All are boys who might not otherwise have been able to attend summer camps.

▶ FURNACE SUPPLY CO., 2819 Central Ave., Birmingham, Ala. has been named a distributor of furnaces, air conditioners and water heaters by Perfection Industries, Div. of Hupp Corp. Jack Rawls is owner of Furnace Supply and John Darden is sales manager. Territory to be served is the state of Alabama.

▶ D. N. LATUS CO., 1531 National Ave., Helena, Mont. will represent Perfection Industries, Div. of Hupp Corp. in Montana and northern Wyoming. The Latus firm will handle distribution of furnaces, air conditioners and water heaters.

▶ DESIGNED WEATHER DISTRIBUTORS, INC., 87 Searing Ave., Mincola, L. I., N. Y., has been organized to serve as Long Island distributors for air conditioning products of the Unitary Equipment Div. of Carrier Corp. Irving D. Klein is president of the distributing firm.

▶ BRYANT HEATING & AIR CONDITIONING CO., Bryant distributor in Omaha, has moved into its new office and warehouse located at 612 Douglas St.

▶ THE CAMERON & BARKLEY CO. has been appointed distributor for Niagara Machine & Tool Works in South Carolina and Florida. The executive office of the Cameron & Barkley firm is in the Barkley Bldg.,

(Continued on page 160)

# Viking®

## Humidifiers

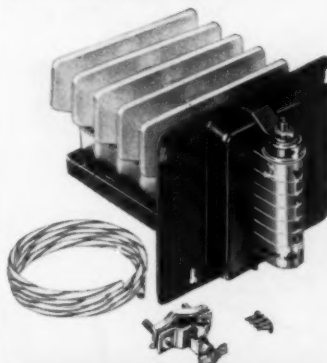


**"Viking's Secret 'Ingredient X' sells homeowners on the '5600' for you!"**

"Ingredient X" is a tool! If used faithfully it will guarantee sales of the Viking "5600" Humidifier with no extra sales effort on your part. "Ingredient X" has increased Viking "5600" sales volume as much as \$3,000 for contractors who are using it.

### Your Distributor Has "Ingredient X"

Your distributor has the exciting "Ingredient X" story now. He'll provide you with "Ingredient X" and tell you how you can earn EXTRA money with the Viking "5600" Humidifier sales program. See your distributor now.



Get the Complete Profit-Packed Story From Your

**Viking**  
Distributor

### VIKING AIR PRODUCTS

5601 Walworth Ave., Cleveland 2, Ohio

WHEN YOU BUY REGISTERS AND GRILLES  
LOOK FOR THE **KRUEGER**  
"DESIGN-AIR" CARTON

IT'S THE **PACKAGE** with the

# PROFIT!



The #900 BASEBOARD DIFFUSER is a "job winner". Quality made . . . yet it gives you a real price edge. Count on KRUEGER'S DESIGN-AIR line to get you those "close" jobs.



Successful dealers everywhere are using the Krueger "Design-Air" line.

Reason: It's the really complete high quality line that's priced right to give you the biggest profits on the market today.

**KRUEGER** Air Conditioning Corp.  
19 E. RILLITO • TUCSON, ARIZONA



with **BUCKEYE** TIME  
PIPES AND FITTINGS



Standardized Buckeye Pipes and Fittings save bench time, allow you more time to sell and make new installations.

**Do A Better Job . . . Faster**  
**Specify Buckeye Pipes and Fittings**

- Metal seaming adds rigidity to collars, fittings, assures firm, lasting pipe construction.
- Side take-offs are notched for easier connections.
- Special packaging for easier identification, handling.
- Buckeye Snap-Tite pipes—save time, labor—just push sections together, edges interlock.

If your local jobber cannot supply Buckeye pipes and fittings . . . contact us directly for the name of your nearest Buckeye Jobber.



**BUCKEYE**  
FURNACE PIPE COMPANY  
897 Ingleside Columbus 8, Ohio



# BOOKS

on RESIDENTIAL WARM AIR HEATING--AIR CONDITIONING--and SHEET METAL

(Reprinted from articles originally appearing in AMERICAN ARTISAN.)

Mail order to Keeney Pub. Co., 6 No. Michigan Ave., Chicago 2, Ill.

★ CORRECT PRACTICE IN RESIDENTIAL COOLING -- Volume II -- 132 Pages, 8½ by 11...\$1.50

S. W. Reid tells how to deal with 'Special Air Conditioning Problems'...how to analyze owners "complaints"...diagnose what's wrong in each case...adjust or replace whatever parts are causing trouble...how to convert an existing gravity system to a comfort a.c. system...how to organize or enlarge an air conditioning department, proper forms and best procedures...how to train installers, service men, etc. Valuable "Know-How" available nowhere else! A wealth of data for all engaged in comfort air conditioning!

★ CORRECT STANDARDS FOR FORCED WARM AIR HEATING SYSTEMS -- 88 Pages, 8½ by 11...\$1.50

This series of 17 articles by S. Konzo provides correct standards for evaluating the comfort performance of any forced warm air heating installation...also for improving efficiency of a newly installed system...or for correcting faulty adjustments in existing systems. Being so realistic and practical, the National Warm Air Heating & Air Conditioning Association plans to adopt such standards for the whole industry. Here are "How-to-do-it" facts for installers and service men to start using at once!

★ CORRECT PRACTICE IN ESTIMATING OVERHEAD COSTS AND PROFITS--36 Pages, 8½ by 11...\$1.50

Reprinted articles by N. J. Biddle, Secretary, Michigan Heating & Sheet Metal Assn., who discusses proper methods for accurately estimating materials, labor, and overhead costs...for determining the right bid-price that will insure you proper PROFIT-PROTECTION job-to-job. "Must" reading for dealers and contractors who want to quote on and get future jobs at correct bid-prices, with adequate net profit to themselves.

★ DUCT WORK ESTIMATING TABLES by E. B. Root -- 21 TABLES...\$1.00

Based on cost records covering many thousands of duct jobs, these 21 tables show the minutes of time and pounds of material required to fabricate more than 2,000 different sizes and types of duct sections and fittings. All duct depths from seven to twelve inches, and all widths from four to forty-four inches are covered. You need know only the sizes of the sections or fittings to be made up in order to read off from the tables the material and time needed to fabricate each one.

★ PATTERN DEVELOPMENT FOR AIR CONDITIONING FITTINGS -- 113 Pages, 8½ by 11...\$1.50

Practical methods for developing and cutting patterns for fittings and typical sections used in residential air conditioning, ventilating, and forced air heating systems. Simplified rules by Wm. Neubecker and true geometrical methods for the more complicated fittings, with actual drawings for 56 fittings.

★ CORRECT PRACTICE IN INDUSTRIAL SHEET METAL WORK -- 2nd Printing -- 218 Pages...\$1.50

Contains all basic design and engineering data necessary for the proper planning and installation of fume removal, dust collecting, wood-waste removal, ventilating and other industrial sheet metal systems and equipment. Made up in the main of data published in American Artisan, this book offers sheet metal contractors dozens of practical designing ideas, layouts, installation kinks, tables and charts, contributed by more than 50 of the country's leading industrial sheet metal experts.



## Keeney Publishing Company

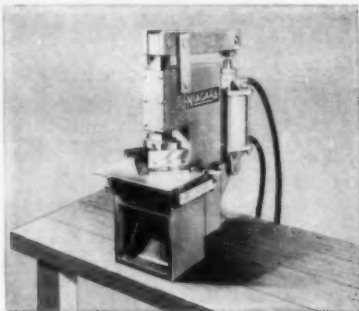
6 North Michigan Avenue, Chicago 2, Illinois

# WHAT'S NEW IN SHEET METALWORKING EQUIPMENT



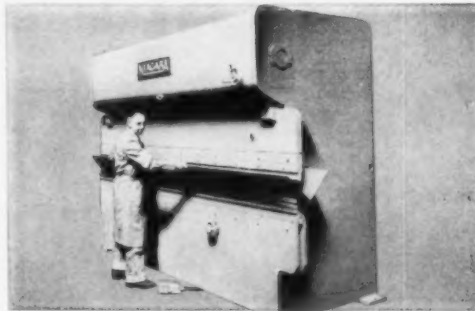
## PIPE CRIMPER EXERTS AMAZING PRESSURE WITH MINIMUM EFFORT

New Niagara Model 500 Compound Leverage Pipe Crimper multiplies hand pressure. Extremely easy to use. Makes two crimps at a time. Pliable, vinyl plastic grips prevent hand slippage. Stop-posts provide finger clearance when working against bench. Rugged, all-steel construction. Lightweight. Abrasion-resistant. Parco-lubricized to withstand corrosion. Ideal for crimping at job site. 1 1/4" blades. Capacity: 20 gage mild steel. Request *Supplement 78B*.



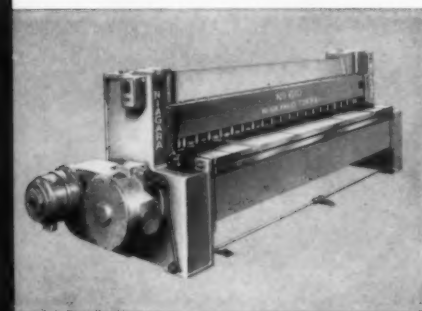
## AIR POWER NOTCHER & PUNCH DOES MULTITUDE OF JOBS

Versatile Niagara Model 65-5 Notching & Punching Machine speeds production. Air actuation (by a foot valve) frees both hands for handling material. Ram can be lowered gradually to locate work and facilitate die changing. Large selection of punches and dies for simple or intricate holes, corner trimming, combination trimming and cutoff. Operates on shop air at 80 psi. Floor stand optional. Duplex setup (two machines teamed to work as one) also available. 4 3/4" throat. Capacity: 6 1/2 tons. Request *Bulletin 79*.



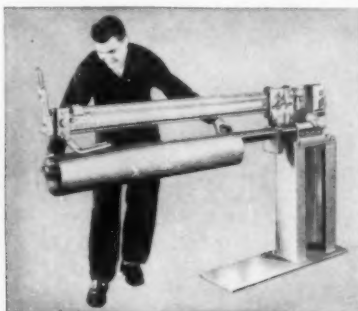
## PRESS BRAKES COMBINE CLEAN-SWEEP STYLING & MODERN POWER FEATURES

Niagara's all-new Series IB 30 and 50-ton Press Brakes are streamlined in a modern, space-saving way. Everything's inboard: motor, belts, flywheel, clutch, brake, gears, connections, pitmans and ram-adjustment mechanism. Niagara Power Features — Power Clutch, Power Brake, Power Treadle — assure easy, instant response to every command. All-welded steel one-piece frame with integral, wrap-around crown provides utmost rigidity. 50% deeper throat. Power ram adjustment. Centralized pressure lubrication system. Request *Bulletin 90*.



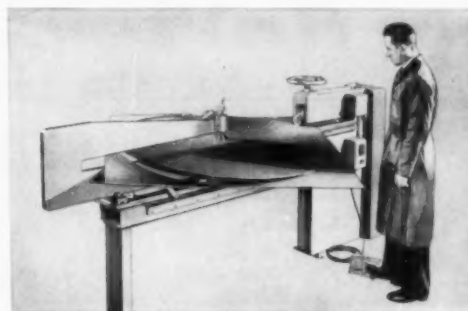
## POWER SQUARING SHEARS CUT WITH UNRIVALED SPEED AND ACCURACY

Niagara Underdrive Power Squaring Shears provide utmost in accuracy, speed and thrifty performance. Positive, power-actuated, self-compensating hold-down. Fully closed box section construction of bed, crosshead, hold-down and housings. Multi-jaw, instantly engaging sleeve clutch. Full visibility of cutting line. Quick setting gages. Simple design cuts costly maintenance. Vital drive components operate in sealed oil bath. 59 models. Capacities: 16 gage through 1 inch mild steel. Cutting lengths: 4-20 ft. Request *Bulletin 69G*.



## POWER GROOVER CLOSING SINGLE AND PITTSBURGH LOCK SEAMS

Modernized Niagara Model 48-U Universal Power Grooving Machine is built for speed and operating ease. Multi-purpose horn can be easily rotated and locked in any one of several positions for closing single (on round and square work) or Pittsburgh lock seams. Convenient controls speed production. Driven by direct connected, gearhead motor. Rugged, fabricated steel construction. Compact, space-saving design. Working length: 48". Capacity (mild steel): Single lock seam — 20 gage; Pittsburgh lock seam — 18 gage. Request *Bulletin 76*.



## RING & CIRCLE SHEAR CUTS TRUE CIRCLES WITH EASE

New Niagara Ring & Circle Shear No. 31-RC features a self-compensating circle arm which maintains true center automatically, regardless of changes in circle diameter, thickness of material or overlap of cutters. Extremely versatile. Can be used for straight or serpentine cutting, as well as for cutting circles, circular holes and rings. Equipped with swing and slitting gages; high carbon, high chrome cutters. Capacity: 10 gage mild steel for cutting circles 6" through 78" in diameter. Request *Supplement 70*.

## GET THE FULL STORY

on the machines and tools shown above by checking any of the bulletin numbers on the attached coupon and mailing it to Niagara Machine & Tool Works. For condensed information on Niagara's complete line of Power and Manually Operated Machines & Tools for Light Sheet Metal Work, check Booklets 202 and 201 respectively.

TO: NIAGARA MACHINE & TOOL WORKS • 683 Northland Ave., Buffalo 11, N.Y.

Mail your literature checked below without obligation:

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| <input type="checkbox"/> Bulletin 79  | <input type="checkbox"/> Bulletin 90   | <input type="checkbox"/> Booklet 201 | <input type="checkbox"/> Booklet 202    |

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 FIRM \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

AA

Here's the **HUMIDIFIER**  
you've been **WISHING FOR!**



LISTED  
MEETS S.U.R.  
REQUIREMENTS  
PAT. PENDING

# BON-AIR

*First Completely Automatic*  
**ATOMIZING HUMIDIFIER**  
*at a* **POPULAR PRICE**

*This humidifier really works! You'll be amazed at the effective output as BON-AIR automatically atomizes fresh water into a cool, fog-like mist that immediately disappears in the air stream. No more service problems or call backs! One model installs quickly on plenum, duct or counter flow furnace. Looks like a million! Works like a charm! See your jobber or write for illustrated catalog.*

- ★ **LIFETIME COPPER CONSTRUCTION GUARANTEED QUALITY!**
- ★ **MOTOR OPERATED FOR POSITIVE, MECHANICAL FRESH WATER ATOMIZATION!**
- ★ **NO MINERAL RESIDUE — NO LIMING OF WORKING PARTS!**
- ★ **SERVICE FREE — NOTHING MORE TO BUY! NO JETS, NO NOZZLES, NO EVAPORATOR PLATES!**
- ★ **POSITIVE, CONSTANT OUTPUT — YEAR AFTER YEAR!**

Engineered and Designed by  
**ARKLON MANUFACTURING CO.**  
P. O. BOX 3501 • CLEVELAND 18, OHIO

**FOR OIL BURNERS  
GAS HEATERS AND  
AIR CONDITIONERS**



## FLUSH-TYPE LATCH by National Lock

**check these convenience and  
cost-saving advantages!**

1. Mounts flush. Absence of projecting handle streamlines your product.
2. Simplifies cartoning and crating. Fewer protective pads required.
3. Operated by large coin or screw driver. No special tools needed.
4. Latch tongue can be adjusted in one simple operation.
5. Permits pre-shipment latch installation.
6. Provides worthwhile savings within your functional hardware costs.

*Send for specifications and sample today*

**Look To This One-Source Supplier For  
All Your Hardware Requirements**  
**CATCHES • HANDLES • HINGES**  
**PULLS • SCREWS • KNOBS**  
**"KEPS" • "SEMS"**

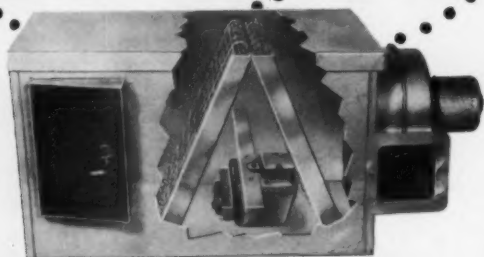
*Write for Complete Information*



**NATIONAL LOCK COMPANY**  
Rockford, Illinois

**NOW!!**

## ADAPT THE UNIT to the Warm Air System NOT THE SYSTEM TO THE UNIT!



### Little Giant Automatic Humidifier installs easier .. for less!

Any installation of Little Giant Automatic Humidifiers is simple, economical, more profitable for you. Little Giant adapts itself in a variety of ways (see drawings), regardless of plenum sizes, on the bonnet or positive duct . . . so easily you cut installation costs up to 60%. And years of trouble-free service leads to more customer satisfaction than you ever dreamed possible . . . all adding up to more sales and profits for you!

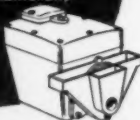
**Quality** in every feature . . . helps you sell

- HUMIDISTAT controls moisture content
- Little Giant Vaporizer hermetically sealed in oil
- Sturdy metal tank treated to resist corrosion
- No jets, no nozzles, odorless evaporative pads, impervious to minerals in water
- Small and quiet in operation . . . evaporates up to 22 gallons of moisture each 24 hours
- Operates on 110 volt 60 cycle single phase current

WRITE FOR MORE COMPLETE SPECIFICATIONS AND PRICES

#### THE "INSIDE STORY"

The heart of Little Giant Humidifiers is the famous Little Giant Vaporizer. Simple in construction and never needing lubrication, it operates quietly and efficiently. Unconditionally guaranteed for one year.



**Little Giant PUMP COMPANY**

Division of Little Giant Vaporizer Co., Inc.  
5101 N. Classen Blvd., Oklahoma City, Okla.



## wholesaler doings

(Continued from page 155)

1939 Hendricks Ave., Jacksonville, Fla. Branch offices are located in Cocoa, Miami, Mulberry, Orlando and Tampa, Fla., as well as Charleston, S. C. The company will distribute the entire line of presses, press brakes, shears, etc.

► THE SIDLES CO. of Omaha, Nebr. will handle distribution of heating and cooling equipment for Fraser & Johnston Co. in Nebraska and part of Iowa.

► SNODGRASS & SMITH CO., Denver, has been named to handle distribution of Rheem heating and cooling equipment in Colorado and southern Wyoming.

► "Rosco" has been registered as a company trademark by the Rolled Steel Corp., Skokie, Ill. distributors of sheets, bars, plates and structural steel products. A contraction of the company name, the new trademark is being used on wrapping paper, seals and strapping, as well as on stationery, invoices, and purchase orders.

► JOHN M. McDONALD III has recently joined the A. Y. McDonald Mfg. Co. Mr. McDonald will undergo a training period in the company's wholesale division, eventually working as assistant to the manager.

► THE E. E. SOUTHER IRON CO., St. Louis distributor, will represent the Mercury Air Conditioning and Heating Div., Lord & Palmer, Inc. in eastern Missouri and southern Illinois. The Souther firm will handle the sale of both residential and commercial air conditioning equipment.

► VALLEY SHEET METAL CO., Phoenix, Ariz., distributor, will handle applied equipment for Carrier Corp.'s Unitary Equipment Div. in the Phoenix area. Valley Sheet Metal is headed by Robert L. Bayless, Jr.

► FASCO INDUSTRIES, INC. is now in the process of setting up a nationwide distributing organization. Present plans call for the establishing of distributors in all major cities.

► THE SCHWAB FURNACE CO., Milwaukee, has been appointed a distributor of "Rheemaire" central heating and air conditioning equipment for residential and commercial applications.

► THE METAL DISTRIBUTING CO., INC. of Alexandria, Va. has been named a distributor of commercial air conditioning equipment by the Mercury Air Conditioning and Heating Div. of Lord & Palmer, Inc. Territory to be served includes Washington, D. C. as well as five counties in Maryland and 17 in Virginia.





IF YOU'RE REALLY SERIOUS  
ABOUT SELLING *QUALITY*

*Fraser-Johnston*

**CAN HELP YOU**

Selling *quality* heating and air conditioning equipment in today's market is the most sensible way many dealers are protecting their profit position and strengthening their business for the future. FRASER-JOHNSTON helps you sell *quality* by manufacturing *only* top quality equipment, designed to meet and exceed performance standards recently published and those slated for industry acceptance.

★ **Adjustable fan and limit controls** make it easier to attain high quality comfort at every temperature.

★ **A wide range of sizes** in the FRASER-JOHNSTON line enables you to sell the perfectly sized installation.

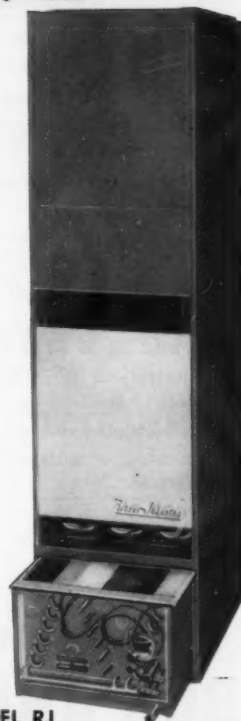
★ FRASER-JOHNSTON's **extremely large fans** provide extra air delivery with less noise and blower wear.

★ Most FRASER-JOHNSTON belt-driver furnaces carry **0.6 in. AGA high static approval**.

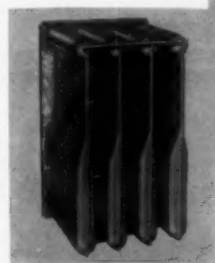
★ **Quality includes efficiency** — and FRASER-JOHNSTON's **design** gives top heating economy.

★ **Large condenser fans** provide high capacity quieter operations than ordinary condensers.

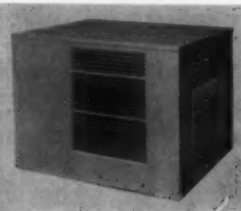
These are just a few of the highest-quality features you can sell when you let FRASER-JOHNSTON help. Some territories still open. Write for full information.



MODEL RJ



Heating Element  
Model RJ, LJ, CJ, GP



Model A 17  
Condensing Unit

**THE BEST ENGINEERED AIR CONDITIONING GAS FURNACE ON THE MARKET**

1900  
17TH STREET

*Fraser-Johnston*  
OVER A QUARTER OF A CENTURY OF LEADERSHIP

SAN FRANCISCO  
CALIFORNIA

## merchandising ideas

► To "PULL" SALES, the Roofing and Sheet Metal Crafts Institute suggests a pair of tiny magnets for use as a direct mail giveaway. The dealer's name and address may be imprinted on the magnets, which are available at a small cost from various direct mail specialties manufacturers. The institute suggests the use of a sales message containing such tie-in words as pull, drag, draw, magnetize, etc.

► AACTIVE HEATING CO. of Beaverton, Ore. has equipped a small house trailer with a sofa and two operating furnaces, one gas and one oil, which are connected to perimeter heating ducts. This traveling showroom with its live demonstration units visits home shows, fairs and other events where prospective customers are likely to be found. According to A. J. McCollister, vice president of the company, the trailer and its canvassing program accounts for between 75 and 80 percent of all leads.

► AN 11 X 17 IN. RED AND BLACK BANNER featuring illustrations of "Shopmate" portable electric power tools is available to dealers of Portable Electric Tools, Inc. Printed on both sides, the banner can be hung on wire, or affixed to windows, walls, etc.

► ARMSTRONG FURNACE CO. offers book matches as a low cost advertising medium that reaches both new prospects and regular customers. The company suggests that books be given to salesmen for use as business cards and to servicemen who can leave a few with home owners after making a service call. The books, imprinted with the dealer's name and address and listing products and services available, can also be distributed at social meetings.

► To HELP SELL packaged air conditioning units, Mitchell Mfg. Co. has prepared a kit containing three-dimensional color slides and a small viewer. Twenty-eight slides are available—11 showing air conditioners for small commercial applications, 12 illustrating residential conditioners and five featuring the company's "Compax" series. The slides are contained in the lower third of a 4 X 6 in. card. The upper part of the card contains a black and white photograph of the slide to provide quick identification.

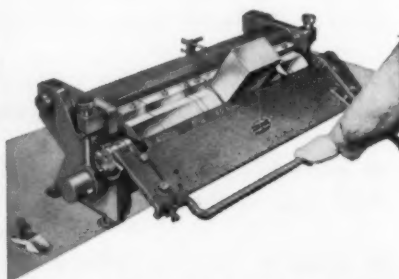
► DESK CALENDARS FOR 1958 for mailing to customers or prospective customers are available to dealers of Armstrong Furnace Co. Dealer imprint in blue ink gives name, address and telephone number and also identifies the dealer with Armstrong. The calendars are book-bound in white and blue embossed leatherette.

## Hand Operated BOX AND PAN BRAKES

One Man Operation - Quick Adjustments - Rugged Construction



**UNIVERSAL BOX AND PAN BRAKES**  
Capacities up to 12-gauge sheet metal  
and bending lengths up to 10 feet.



**BENCH MODEL BOX AND PAN BRAKES**  
Made in three sizes with bending lengths  
of 24, 30, and 36 inches up to 16-gauge  
sheet metal. Stand is available as extra.

**CHICAGO**

DREIS & KRUMP

Descriptive Literature on Request.

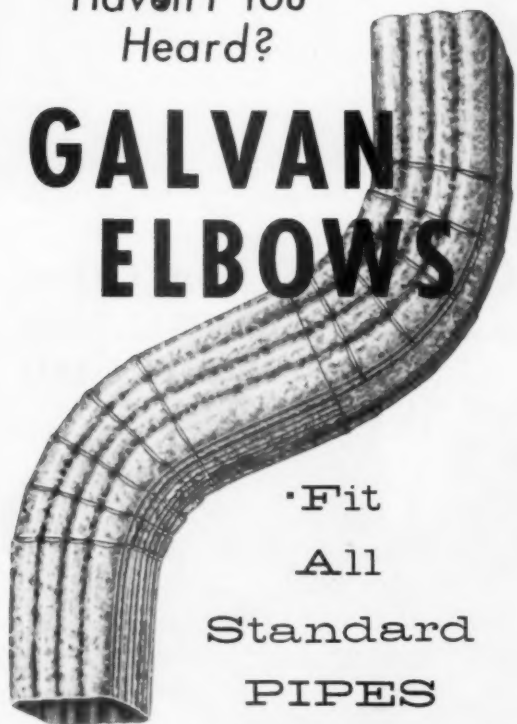
**DREIS & KRUMP**  
MANUFACTURING COMPANY  
7404 S. Loomis Boulevard, Chicago 36, Illinois



**WHAT'S  
CAUZZIN'  
ALL THE BUZZIN'?**

*Haven't You  
Heard?*

**GALVAN  
ELBOWS**



• Fit  
All  
Standard  
PIPES  
PERFECTLY



# FAN-AIR<sup>®</sup>

BASEBOARD DIFFUSERS



**Recommended  
For Heating and  
Cooling**

**STURDY  
DENT RESISTANT**

**MADE OF  
20 GAUGE STEEL**

**EASY TO INSTALL**

**THREE SIZES**

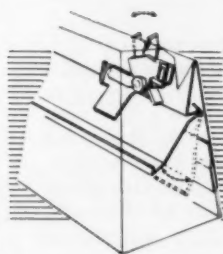
**3', 5', 8' lengths**

**With the Built-In Full-Length  
Balancing Damper**

*Regulated with lever; avoids need of adjustment in pipe.  
Also without damper.*

**Instantly Adjustable Boot Opening**

*Easy to position in center of room; adequate slot for joists.*



Made of 20 gauge steel, diffusers are sturdy and dent-resistant; easily installed and positioned; smartly styled and finished in a neutral prime coat; attractively inconspicuous in the room. Small lever with set-screw adjustment regulates full-length damper.

**ASK YOUR  
JOBBER**

**FAN-AIR<sup>®</sup> COMPANY**

DOWAGIAC  
MICHIGAN

**NOW** SELL MORE • MAKE MORE  
SAVE WORK • CUT EXPENSES  
REDUCE STOCK INVENTORIES

sell and specify

**A-lum-O-Aire**  
permanent dry-type  
**FILTERS**

For All Warm-Air  
Furnaces and  
Winter-Summer  
Air-Conditioners

Standard 1" and  
2" sizes for any  
make and model  
in stock. Special  
sizes to order  
shipped by  
air mail.



## BEST BET for peak sales faster turnover • easier servicing!

Here's the filter that practically *guarantees* fast-action, "register-ringing" filter merchandising! Features that *help* you sell, *plus* an established demand, make it a real volume-builder.

You'll *sell* more because the market is already primed and educated on the economy and superior efficiency of new *permanent* filters. You'll make more because the new "A-lum-O-Aire" pricing policy lets you realize a better return while you're meeting and *beating* competition!

What's more, "A-lum-O-Aire" is a natural tie-in with your present service operations. You gain better control of your service accounts — and add new ones as you go along! Better yet, you save time, effort and expensive material costs required by out-dated filter cleaning methods.



Sounds fine, so far! But what about "minimum quantities," *quotas* and stock requirements? *That's* where "A-lum-O-Aire" tops them all! You *buy* only what you can *sell* and you stock only what you *NEED*! And, you can forget *sizing* problems.

Safe, clean and economical, "A-lum-O-Aire" needs no messy oils or adhesives to catch dirt, dust or lint particles. Revolutionary "A-lum-O" Aluminum Wool does *ALL* the filtering; saves work and worry — washes clean in a jiffy with cold water. Rustproof and fireproof. Approved by Underwriters' (Class 1). Costs less per clean filter than any other and they can be cleaned as often as necessary without sacrifice of efficiency.

Attention Distributors: Exclusive territories in several selected areas still available. Write for details, today!

**Carey** Electronic Engineering Co.  
METAL WOOL DIVISION  
Dept. A-27  
1880 Clifton Avenue Springfield, Ohio

## appointments . . .

► **STUART A. SMITH** as vice president and sales manager of J. V. Patten Co. Mr. Smith was formerly sales manager for the Waterman-Waterbury Co.



Stuart A. Smith



Matthew G. Robertson

► **MATTHEW G. ROBERTSON** as branch manager of the newly created New York branch of Inland Steel Products Co. Robert C. Findlay has been appointed to succeed Mr. Robertson as New York district sales manager.

► **NORMAN S. WRIGHT AND CO.** as western sales representative for the Fan and Blower Div., Peerless Electric Co. The Wright company, with main offices in San Francisco, has branch operations in Sacramento, Los Angeles and Fresno, Calif.; Seattle and Spokane, Wash.; Portland, Ore; and Phoenix, Ariz.

## Cut Installation Costs! One hammer blow permanently rivets

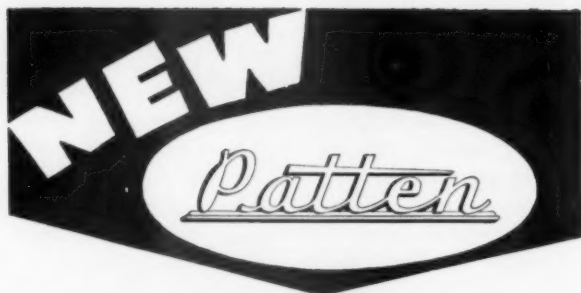


EZ-ON Damper Controls are easily, quickly installed to save you time and money. EZ-ONS lower initial cost offers you additional savings and extra profits. Start saving money now. . . . Call your jobber today!

**LEADING JOBBERS STOCK "EZ-ONS"**  
In Canada — **THERMIDAIRE CORP. LTD.** Toronto

**M.A. GERETT CORP.**  
724 WEST WINNEBAGO STREET, MILWAUKEE 5, WISCONSIN





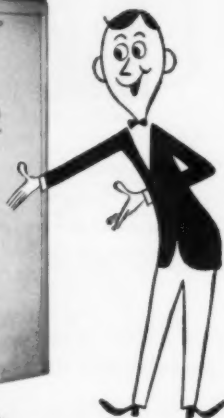
## HEATING-COOLING UNITS to double your sales volume



OIL OR GAS  
HEATING



WATER OR AIR  
COOLING



Gas Input—  
78,000—650,000 BTU  
Oil Output—  
72,000—525,000 BTU

New Patten heating units are now available in 68 types and sizes... all the ultimate in design and engineering efficiency... proved by 56 years of heating experience. Oil burners UL approved; Gas burners approved by AGA Laboratories. Each unit carries the famous Patten 20-year guarantee.

Cooling capacities from two to forty tons

There's amazing versatility in the PATTEN cooling line! 1957 air cooled models in self contained units, remote coil or remote condenser types. Free-standing space coolers for commercial and industrial installations. Suspended air handlers available, too.

... write today for complete details on these new, low-cost combination units

The Quality Line at Competitive Prices



## NOW there are 14 Vaporite MODELS

... a size and type Humidifier for every furnace installation.

EVERY MODEL TESTED AND PROVED

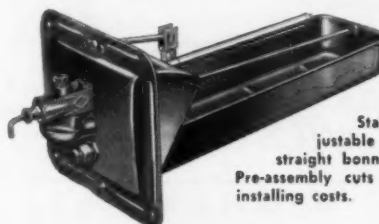


SERIES 555  
Fits any straight side  
warm air furnace.

Corrosion resistant, stainless steel vapor pan 4" x 15". Completely assembled for quick and easy installation.

New copper overflow on Model 555C.

- No extras to buy
- No parts to assemble
- No extra holes to cut
- No tricky mounting



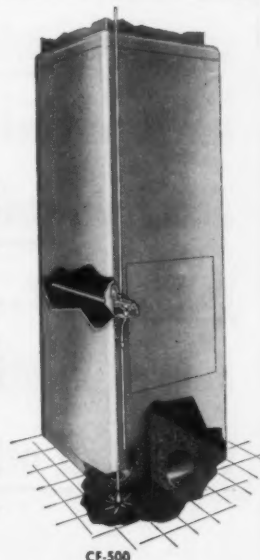
SERIES 577  
Stainless steel. Adjustable to sloping or straight bonnet furnaces. Pre-assembly cuts labor time and installing costs.

EVERY MODEL WITH NEW SENSITIVE THERMOSTAT CONTROL TO ASSURE BALANCED HUMIDITY

### LOW COST

#### FIELD-TESTED COUNTERFLOW STYLE

- Designed especially for basementless houses with perimeter heating.
- Complete assemblies for furnaces with concrete floor plenums or with crawl space plenums.
- Installs in minute on exterior of furnace casing. All parts furnished.



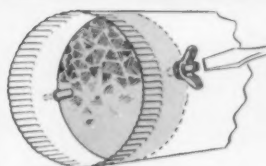
CF-500

WRITE FOR CATALOG AA-9

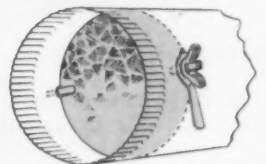
AUTOMATIC HUMIDIFIER CO, Cedar Falls, Iowa.

# NOW *Malco* DAMPERS WITH OR WITHOUT HANDLES

Yes, the choice is yours with MALCO dampers.



**BALANCE** every job. Just loosen wing nut and adjust with screwdriver. Easy to do yet it discourages householder from changing your adjustments.



**OR ADD** handles for householders convenience in making future adjustments.

**ECONOMY** is yours too. Buy complete MALCO dampers for about the price of a quadrant alone. Handles can be ordered separately.

Contact your jobber or write today to

*Malco*

## PRODUCTS

405 East 48th Street  
Minneapolis 9, Minnesota

## appointments

(Continued)

► **LEONARD C. LINDSTROM** as sales manager of the Air Impeller Div. of the Torrington Mfg. Co. He joined the division in 1948 as a laboratory engineer and has since held positions as sales supervisor, administrative assistant to the sales manager, salesman in the New York area, and assistant sales manager.



Leonard C. Lindstrom



Harold E. Gahnz

► **HAROLD E. GAHNZ** as a district manager for Armstrong Furnace Co. For the past eight years he has been associated with another furnace manufacturer in a sales capacity and before that was affiliated with the Gamble Stores of Minnesota.

► **JOHN F. SCHIPITZ** and **Robert Vandervoort** as members of the sales staff of Simpson Electric Co.

**In the New York market  
...where price is  
an important factor ...  
and rigid building  
codes exist ...  
Empire Ventilators  
outsell all others.**



Sold thru  
leading  
wholesalers.  
See your  
jobber.

**Empire Ventilation Equipt. Co.**

35-39 Vernon Boulevard  
Long Island City 6, N. Y.

## FOR GAS AND OIL

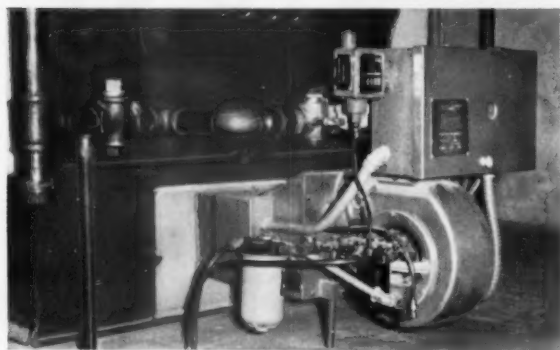


### LO-BLAST

#### POWER-TYPE DUAL FUEL BURNER

The finest gas burner...the finest oil burner...now combined in one great unit! Another Lo-BLAST engineering achievement! Check these features—

- **Highest efficiency on either gas or oil.** Lo-BLAST design assures maximum fuel economy.
- **Laminar Flame Oil Burner.** Wide flat flame—no impingement on walls or crown sheet.
- **Fits low base boilers.** Installs through average ashpit door.
- **Reliable—safe.** Factory tested. Underwriters' Laboratories approved.
- **Complete package.** Shipped assembled and wired.
- **Manual or automatic fuel selector.** Damper transfers blower air to either gas or oil burner. Damper position governs switching action to controls.
- **Soft quiet flame.** Low pressure combustion air keeps both oil and gas flames quiet.
- **Safety purge cycle.** 30 second purge on each call for heat—also on fuel changeover.
- **No coking or clogging of oil nozzle.** Shield protects oil manifold against reflected heat. Air cooled during gas cycle.

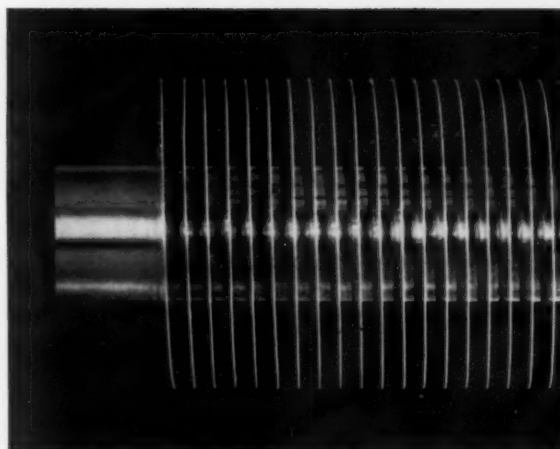


Send now for literature on this sensational new dual fuel burner

**MID-CONTINENT**

**METAL PRODUCTS CO.**

1960 N. Clybourn Ave., Chicago 14, Ill.



## AEROFIN Smooth-Fin Coils offer you

**Greater Heat Transfer  
per sq. ft. of face area**

**Lower Airway  
Resistance**

**—less power per c.f.m.**

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.



Write for Bulletin S-55

**AEROFIN  
CORPORATION**

101 Greenway Ave., Syracuse 3, N.Y.

Aerofin is sold only by manufacturers of fan system apparatus. List on request.

## FASTER HEAT

*johnson*

### MELTING POT FURNACES

#### NO. 15

Melts 18-lb. lead capacity in under 10 min. Built to stand up under hard use. Has powerful No. 5, Type A Johnson Patented Direct Jet Bunsen Burner with shut-off valve and pilot light. Height, 13". 13,000 BTU's per hr.

#### NO. 105

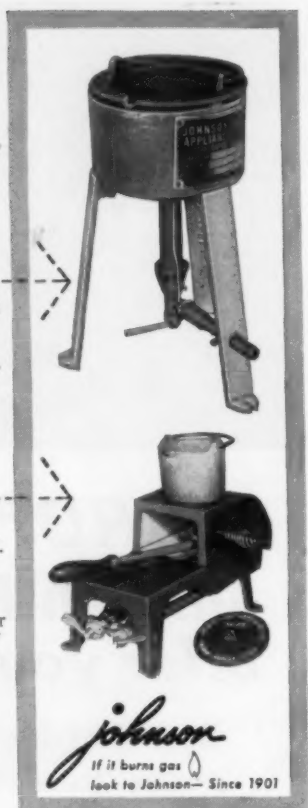
##### Soldering and Melting

No forced air blast required. Cast iron pot capacity, 10 lbs. Two-burner unit doubles for heating soldering coppers up to 12 lbs. per pair. Firebox 3 3/4" by 4 1/2" by 5 1/2". 26,000 BTU's per hr. Length, 14".

WRITE FOR FREE JOHNSON CATALOG

JOHNSON GAS APPLIANCE COMPANY

580 E Avenue N.W., Cedar Rapids, Iowa



## appointments

(Continued)



Wilford O. Schwartz



Frank W. Ingold

► WILFORD O. SCHWARTZ as sales manager for the St. Louis steel service plant of Joseph T. Ryerson & Son, Inc. Mr. Schwartz started with the firm in 1936. Frank W. Ingold has been named to the newly created post of sales manager for the Cincinnati steel service plant. Succeeding Mr. Ingold as sales representative in the Ohio area is Elmer A. Jahnke, Jr.

► R. B. STONE as vice president and sales manager for the Dura-Vent Corp. of Redwood City, Calif. For the past 10 years Mr. Stone has been midwestern sales manager for the Peerless Mfg. Div. of Dover Corp. His headquarters will be in Louisville, Ky., but he will retain sales offices in the Merchandise Mart, Chicago.

## PROOF that all Baseboard Diffusers are not alike



the  
NEW  
P-68

**New P-68** with  
28 square inches of free area

Length 18"  
Stackhead Sizes:  
2 1/4 x 12  
2 1/4 x 14



Visioneered to answer today's huge demand for a shorter, more efficient baseboard diffuser, P-68 with 28 square inches of free air space is taking the lead!

P-68 offers considerable savings in time and labor costs because the installation is so simple . . . yet in operation it compares to other diffusers UP TO THREE TIMES ITS SIZE. The P-68 delivers a perfect diffusion pattern . . . a soft, gentle fan of air . . . ideal for heating or cooling. Highly attractive design and smooth modern lines blend with any baseboard style in new or remodeled homes.

Write for the complete A & A catalog showing our full line of registers, diffusers and grilles for every type of heating and air conditioning installation.

The **A & A REGISTER COMPANY**

8327 CLINTON ROAD • CLEVELAND 9, OHIO • ATLantic 1-6166



# DIAMOND DIAMALLOY Aviation Snips

Here's why sheet metal men are now buying DIAMALLOY SNIPS:

New Style Handles are solid drop forged steel, plastic covered. Special analysis steel blades hold a keen edge. Compound Action and serrated edges mean easy cutting. Large, hardened pivot bolts give smoother action. Three models, cut right, left, or straight. Fully chrome plated to resist rust. Ask your distributor.

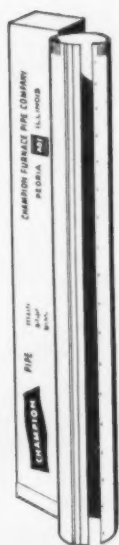


"There is Nothing Finer Than a DIAMOND"

DIAMOND CALK *Horseshoe Co.*  
DULUTH - MINNESOTA TORONTO - ONTARIO

## CHAMPION

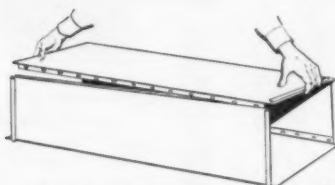
THE COMPLETE LINE OF PRE-FAB FURNACE PIPE AND FITTINGS  
Saves Time and Makes You Money



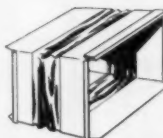
FIVE FOOTER



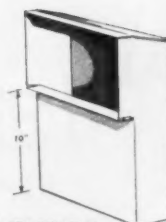
TWO FOOTER



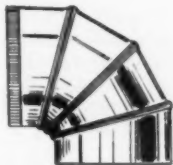
No. 510 SNAP-LOCK DUCT



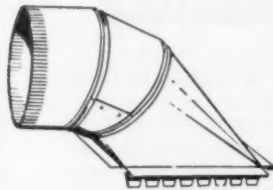
No. 503 CANVAS DUCT CONNECTOR



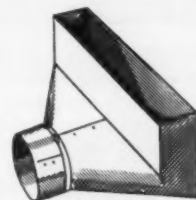
No. 561 STACKHEAD



4 PC. 90°  
ADJUSTABLE ELBOW



No. 585 UNIVERSAL  
ADJUSTABLE TAKE-OFF



No. 610 90° ANGLE  
REGISTER BOOT

AVAILABLE THROUGH LEADING JOBBERS

**CHAMPION FURNACE PIPE COMPANY**  
211 Eaton Street Peoria, Illinois

**CHAMPION**

**NOW! A DURABLE HUMIDIFIER PLATE that WILL NOT BREAK!**

Made of **TOUGH, INERT HEAT RESISTANT FIBRE GLASS!**

**"COMFORT AIR"**  
Humidifier Evaporating REPLACEMENT PLATES

Fits all humidifiers of similar design.

**ATTRACTIVE DISCOUNTS**  
Pack of 5's

**Comparison Tests Prove SUPERIOR WICKING Action**  
Entire surface is wet—uniformly—to help provide healthful moisture control. Fits all humidifiers of similar design.

Dealers: Some Exclusive Territories Available!  
Write for Special Discounts & Samples.

**MULTIPLE Ceramics**  
154 Thorncliff Road • Buffalo 17, New York



## PIPE and FITTINGS

### Prompt Deliveries

MONCRIEF offers a complete line of Prefabricated pipe and fittings for any type of Heating or Cooling system. All precision made, at low mass production cost. Prompt shipment from Atlanta Factory makes MONCRIEF the South's most dependable source of supply on Duct Work, Registers, Grilles and Diffusers. Save time and money by ordering from your jobber TODAY. Write for catalogue showing fittings and prices.

## MONCRIEF FURNACE CO.

P. O. Box 1673 Atlanta, Ga.

## appointments

(Continued)



Sam Gurley, Jr.



John M. Welch

► **SAM GURLEY, JR.** as vice president of sales for the aluminum division of Olin Mathieson Chemical Corp. Mr. Gurley, to be responsible for aluminum sales, advertising and promotional activities, was previously vice president, sales, for H. K. Porter Co., Inc. John M. Welch has been named Chicago regional sales manager for the aluminum division. He will make his headquarters at the Chicago regional and district sales offices.

► **HENRY W. LOCKE** as sales representative for "Metalbestos" gas vent pipe in the state of New Mexico for William Wallace Co. He will work under Harry P. Reynolds, district manager for the area including New Mexico, and will maintain headquarters in Albuquerque.



## Nixalite® Bird Barrier excels in Lasting Quality

Quality is built into Nixalite, the effective but inconspicuous Bird Barrier and Repellent. Quality-engineered craftsmanship and quality-proved materials place it worlds ahead of the field. Nixalite, with its all-projecting needle-sharp points (10 in every inch) embedded, fused and welded to a flexible base bar, is fabricated from the finest nickel-and-chromium stainless steel—finer than that used in precious tableware! The cost of a Nixalite installation is more than offset by savings to the bird-free building owner. **Lasts a lifetime, yet pays its own way in just one year.**

8

pages in Sweet's Architectural, Light Construction, and Industrial Construction Files, and in Building Specialties Manual are devoted to Nixalite.

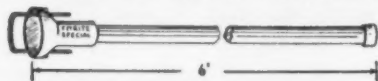
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**NIXALITE COMPANY OF AMERICA**  
115-119 W. 3rd Street Davenport, Iowa, U. S. A.

## GOOD JOBS NEED GOOD TOOLS

For Longer-Lasting, Cooler-Handling use the "FITRITE" SPECIAL ALUMINUM MOP HANDLE.



Light weight, unbreakable, economical. Will not burn. It's job-tested, engineer approved, and offers many exclusive features that make it the most popular Roofers' Mop Handle made. Offered in 6', 7', and 8' lengths.

### A MECHANIC'S THIRD HAND

"FITRITE"  
3-WAY  
CLAMP

Throat  $3\frac{3}{8}$ " deep  
Jaws  $3\frac{1}{2}$ " x  $\frac{3}{4}$ "



A necessary tool for every sheet metal man. Use it for on-the-job bending, forming, seaming, straightening.

Price \$3.55

### "FITRITE" SAFETY HOISTING HOOK

The Sliding Sleeve is gravity operated and drops into position automatically keeping any item safely locked in while hoisting.



A new hoisting hook for safely hoisting buckets and other materials.

Price \$2.50

For 1" rope or cable.

To protect the trade, please use your printed stationery

**DAVID LEVOW** 698 HART ST.  
BROOKLYN 21, N.Y.

## Kirk & Blum THE BLOW PIPE SUPPLY HOUSE

- ONE-PIECE BLOW PIPE ELBOWS
- BALL JOINTS • HOODS
- FLOOR SWEEPS • FLEXIBLE TUBING
- CUT OFFS • ANGLE RINGS
- CYCLONE COLLECTORS & SUPPORTS

From one source you can get all types of blow pipe parts and components . . . made in production quantities by Kirk & Blum.

Depend on K & B manufacturing experience for superior blow pipe parts at less cost than hand made parts.

Write for new Bulletin No. 1356

**THE KIRK & BLUM MFG. CO.**  
3180 Forrer St., Cincinnati 9, O.



Shipped **COMPLETELY ASSEMBLED**  
**READY TO INSTALL**



## ROYAL FURNACE BLOWER

Models with 12" or 10" blower wheel

- Heavy steel bottom, requires no cementing.
- High motor mount, safer in damp basements.
- Large access door, standard-size filters.
- Variable speed drive, easily adjusted.
- Unusually quiet, sturdy construction.
- Beautiful baked-on enamel finish.
- Heavy duty motor, automatic overload protection.

For Prices and details, write

**ROYAL PRODUCTS CO.**  
1406 E. 4th St. Waterloo, Iowa

## Cut ANY Shape in Metal...

with a **BEVERLY THROATLESS SHEAR!**

- Capacities to  $3/16$ " in mild steel
- Make clean, knurl-free cuts in any metal to capacity
- High Carbon High-Chrome Blades
- Built to last a lifetime



Here's What a  
Beverly Can Do!

Cuts made in  
18 ga. metal  
with Model B-1

Beverly Shears are the most versatile metal shearing tools you can use. Unique shoulder design permits any cut . . . rack and pinion gives great power with little effort. Alloy steel body for maximum rigidity and strength. Made in 4 models.

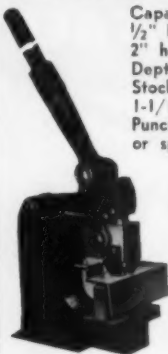
Write for illustrated circular — or see your Beverly Distributor.



Model B-3  
with Ball  
Bearing  
Hold Down

**Beverly SHEAR MFG. CO.**  
3020 W. 111th Street Chicago 43, Ill.

## No. 91 Bench Punch



Capacity —  
1/2" hole thru 1/4" iron; 3/4" hole thru 3/16" iron;  
2" hole thru 1/8" iron. Weight 79 lbs.  
Depth of throat 5"  
Stock size of round punches — 1/8" to 1" by 1/32",  
1-1/16" to 2" by 1/16".  
Punches also made in squares, ovals, rectangular  
or special shapes to customers order.

Has depth gage at punch line and insert-  
able pipe handle.  
Also made with 10", 18" and 24" depth  
of throat.  
Notching attachment made especially for  
this tool, enables the operator to notch  
1 1/2" x 1 1/2" x 1/8" angle iron.

## No. 4-B Jinner's Punch

Capacity 1/4" hole thru 16  
gage iron. Length 8 1/2".  
Weight 3 lbs. Depth of  
throat 2". Punches and  
dies 1/16" to 9/32" by  
1/64". Also supplied with  
three punches and dies in  
cardboard carton.



Write for cata-  
log and see your  
local jobber.

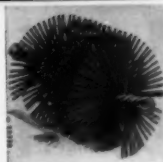
**W. A. WHITNEY MFG. CO.**  
636 RACE ST. ROCKFORD, ILL.

## SCHAEFER

*Better Flue Brush Values*

### Round Flue Brushes

Heavy Flat Steel Wire, Single-Spiraled,  
Oil Tempered. For flues from 1" to 4"  
diameter. Order No. 430.



### Round Flue Brushes

Famous Silver-Bright Rustproof Wire, (No.  
S-432) or Black Oil Tempered Wire (No.  
B-432) Single Spiraled. For Flues from  
1" to 5" diameter.

### Handy Wire Brushes

For roughing, soldering, shop  
or household use. No. 816, 1 1/2"  
wide, 5 1/2" long.

Write for special prices — and new Schaefer  
Flue and Furnace Brush Catalog.

**SCHAEFER BRUSH  
MFG. CO., INC.**

117 W. Walker Street, Milwaukee 4, Wis.



*Buy Schaefer  
... It's Safer*

## appointments

(Continued)

► J. W. FISCHER CO., 3244 Knox Ave., N., Minne-  
apolis as manufacturer's representative handling the  
sale of "Kitchen-Aire" ventilators and range hoods  
and "Stewart-Aire" fans and hoods for Stewart In-  
dustries, Inc. The Fischer company will serve the  
states of Minnesota, South and North Dakota. Marvin  
E. Borngesser, Route 2, Box 319, Thiensville, Wis.  
will cover the state of Wisconsin. Other recently ap-  
pointed manufacturer's representatives are E. J.  
Gibert, Jr., 1319 St. Charles Ave., New Orleans, who  
will cover Louisiana; George T. Olson, P. O. Box  
1005, Jackson, Miss., who will serve the states of Ar-  
kansas and Mississippi; and the C. W. Lehner Co.,  
203 Walton Bldg., Atlanta, Ga., whose territory in-  
cludes Alabama, Georgia and part of Tennessee.

► S. C. McCANN CO., 210 W. 10th St., Kansas City,  
Mo. as sales representative in the western Missouri-  
Kansas area for Drayer-Hanson, Div. of National-U.S.  
Radiator Corp.

► CARL E. CANNON as assistant to the merchandising  
manager of the Air Conditioning Div., Westinghouse  
Electric Corp. Mr. Cannon will be in charge of the  
division's expanding training program for company  
sales personnel and distributors.

## THARCO



### ASBESTOS FURNACE CEMENT

Won't shrink, crack or  
check. Sold in black or  
light gray. One lb. cans up  
to 350 lb. drums.

## DAP

### BLACK-TITE Caulking Compound

Tough, asphalt-  
base for extra  
protection. Won't  
sag or crack. In  
cartridges or bulk  
for gun applica-  
tion.



## Rely-On

### ROOF CEMENT

Plastic asbestos  
base. Won't dry  
out. Low priced.  
In cartridges with  
or without spout.



*Fine products by*

**DICKS  
ARMSTRONG  
PONTIUS, Inc.**

General Offices:  
DAYTON, OHIO

(formerly The Dicks-Pontius Co.  
and The Armstrong Co.)

Call your Jobber or write us



**NOW -**  
**4 TYPES of Unusual**

**HI-RECOVERY  
QUIET AUTOMATIC  
OIL FIRED WATER HEATER**

## HI-RECOVERY® HOT WATER HEATERS

- **GLASS LINED**  
30 gallon with 120 gallon hr. recovery
- **COPPER LINED**  
30 gallon with 120 gallon hr. recovery  
45 gallon with 180 gallon hr. recovery
- **A.S.M.E. GALVANIZED**  
30 gallon—35 gallon—and 44 gallon  
for Motels, Apts., State and Government  
Jobs
- **TWIN COIL JOBS**  
for Laundrettes and Big Buildings  
Coast to Coast Distribution  
Chicago Office: 1005 South Belmont Ave.  
Telephone EAstgate 7-6684



**QUIET AUTOMATIC BURNER CORP.**

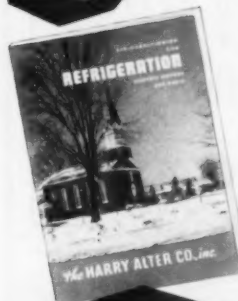
MANUFACTURING ENGINEERS

33-35 Bloomfield Avenue • Newark 4, N. J.  
CHICAGO OFFICE: 1005 W. Belmont Ave. EAstgate 2-6684



## PARTS and SUPPLIES

• Over 10,000 items...  
most complete list in the  
world...carried in stock!  
You'll find them all in the  
NEW Harry Alter De-  
pendabook No. 167 for  
Fall-Winter, 1957-58.



**SAVE MONEY,**  
time, effort by ordering  
from this complete catalog.

WHOLESALE ONLY

Write on your letterhead  
for the **DEPENDABOOK**

**The HARRY ALTER CO., Inc.**

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New York 13, N. Y.  
134 Lafayette St.

Dallas 7, Tex.  
122 Parkhouse St.  
Atlanta 10, Ga.  
690 Stewart Ave., S.W.

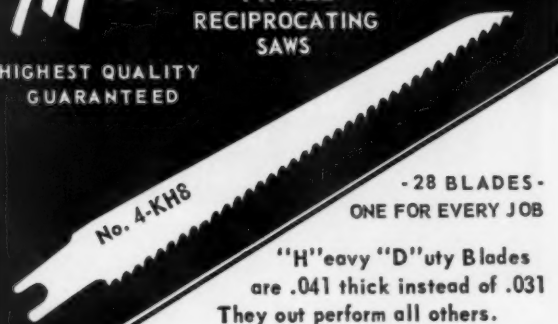
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► THE JAMES A. DOWNEY Co., 4708 Springdale Ave.,  
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Gough, former southeastern district sales representa-  
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► RICHARD S. VINSANT as representative for heating  
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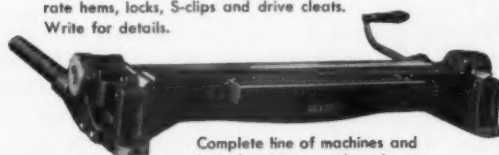
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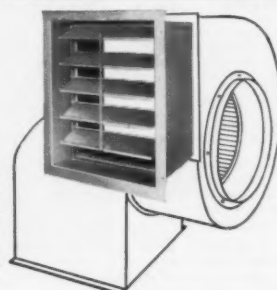
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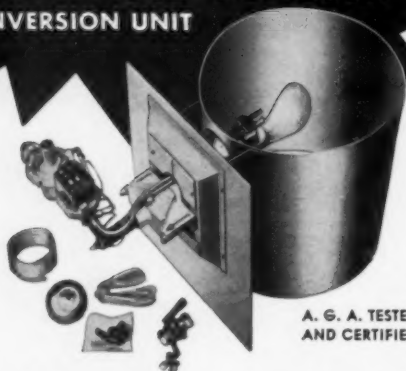


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## appointments

(Continued)

► **WILLIAM C. CHEEK** as midwest regional sales manager for Worthington Corp.'s marketing division. Mr. Cheek has been with the firm since 1920. He was formerly manager of the Chicago district office, in which capacity he is being replaced by John H. Loomis, formerly manager of the corporation's St. Louis district office. Succeeding Mr. Loomis as St. Louis district manager is Hollis H. Wise. Before his recent promotion Mr. Wise was resident general line salesman working out of Indianapolis.

► **WILFRED C. WOODHOUSE** as regional sales manager in New England for Delco Appliance Div., General Motors Corp. Mr. Woodhouse succeeds Paul E. Carlson, who is retiring.

## Obituary

### William Gehrke

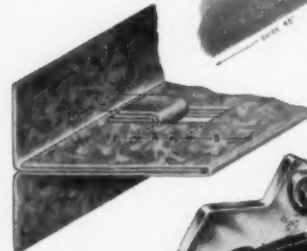
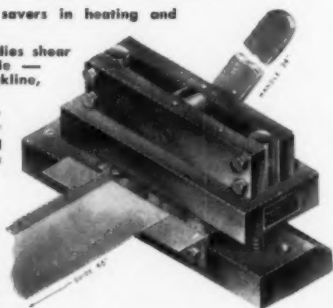
**WILLIAM GEHRKE** of South Side Hardware and Plumbing Co., Sheboygan, Wis., died July 23, 1957 following a coronary stroke. He was 71 years old. Mr. Gehrke was well known in the sheet metal field and for many years was a member of the Sheet Metal Contractors' Association of Milwaukee, Inc.

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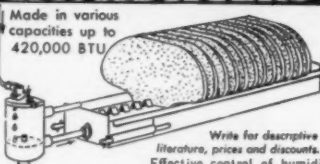
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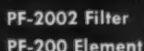
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**...DELIVERS MORE FOR THE MONEY"**  
SAYS TEXAS HOME BUILDER

**"TOPS IN QUALITY...LOW IN PRICE"**

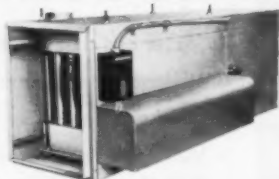
Bill Beck, prominent builder of Midland and Odessa, Texas, picks COZY as the furnace line... tops in quality, yet low in price... that delivers complete satisfaction to the customer, and virtually no service calls for the installer.

Like many successful builders, Mr. Beck knows that his profit margin depends not only on low cost in building, but also on freedom from the expense of adjustments and service calls.

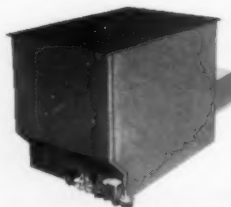
If you're missing out on sales and profit, get the facts on the high-quality, gas-fired COZY line. The COZY high-profit, year-around sales plan can provide the answer to your sales problem. Write today!



Compact UP-FLOW AND COUNTER-FLOW COZY FORCED-AIR MODELS give zero clearance; let you use 4" piping or conventional ductwork. Has exclusive Heat Wringer Heat Exchanger. Adaptable for air conditioning. 75,000, 105,000, 140,000-BTU input capacities.

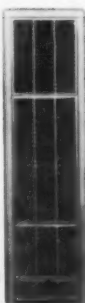


COZY HORIZONTAL FORCED-AIR MODELS available in five capacities: 60,000 BTU to 140,000 BTU input. This space- and money-saver can be installed in attic, utility room, under floor... even without basement.



The COZY CHALLENGER, the best buy in floor furnaces, has four capacities: 35,000, 50,000, 65,000, and 75,000 BTU.

COZY WALL HEATERS, available in four capacities, single- or dual-wall installations; three different temperature controls are available. AGA approved under 1957 central heating standards.



**THE ADVANCE FURNACE CO.**  
WICHITA KANSAS

**COZY**



## SOARING TO NEW HEIGHTS

It's up, up, up at Copeland . . . a continuous record of progress in every phase of the manufacture and distribution of highest-quality refrigeration units.

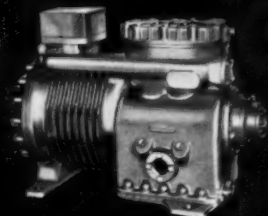
A new factory lifts our production to new heights of distinction. It also speeds up complete parts and replacement service. Thus all who handle and use Copeland equipment greatly improve their inventory position and can free working capital previously tied up.

The future grows brighter all the time for our coast-to-coast network—25,000 dealers working with nearly 150 Copeland wholesalers and more than 500 manufacturers using Copeland-powered equipment.

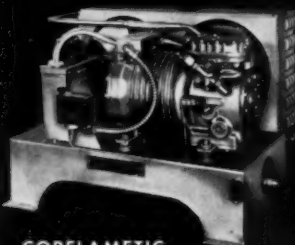
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the fabulous new

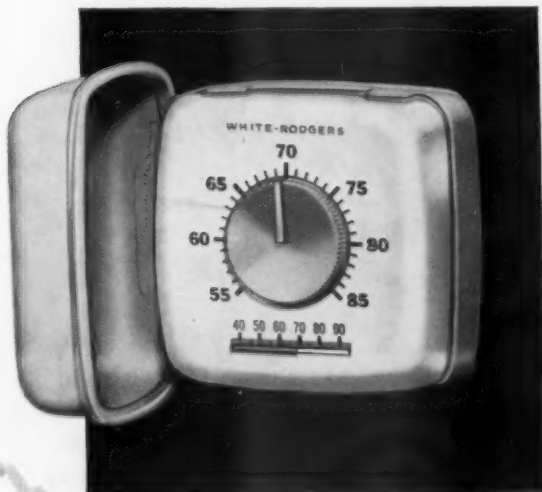
*Fashion* **PUSHBUTTON**  
heating-cooling thermostat

PushButton, year-'round temperature control is now combined with the powerful, sales-motivating styling of the Fashion. Sub-bases to fit any heating-cooling system... backed by the name that's famous for quality controls... White-Rodgers!

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*Fashion* **THERMOSTAT**

Styled to sell with the right shape  
...the right color... smart hinged cover,  
can be painted to match the wall, no  
dials peek through. Ideal for replacement  
of outmoded thermostats... Inconspicuous  
baseplate covers any spots left by  
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Both thermostats are equipped with latest design dial-type adjustable resistor... can be set to match any primary control

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